Mindfulness in Schools: Exploring the impact on internalising difficulties, the role of home practice and the mechanisms of psychological change

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RESEARCH THESIS

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Chapter 1: Introduction to Thesis

1.1. Introduction

Within this introductory chapter, a rationale is given for selecting mindfulness as a topic for the doctoral thesis. This chapter also provides a brief overview of the thesis as a whole, identifying the content of each of the three chapters that follows this introduction. Finally, the epistemological stance of the research is identified and discussed.

1.2. Rationale for Topic Selection

There are growing concerns about the mental health and well-being of children and young people, with recent statistics suggesting that one in ten children need support or treatment for mental health difficulties (The Children and Young People's Mental Health Taskforce, 2015). This statistic is perturbing, especially given that mental health problems can have a profound effect on many areas of children's lives including school adjustment, educational performance, social relationships, future job prospects and physical health (Green, McGinnity, Meltzer, Ford & Goodman, 2005; Centre for Mental Health, 2010; Rodgers & Dunsmuir, 2013). Over the last decade, there has been a growing interest in school-based interventions that promote resilience, improve emotional health and prevent mental health problems from arising (Department for Education, 2010; The Children and Young People's Mental Health Taskforce, 2015). One intervention that many schools are adopting is mindfulness. However, enthusiasm about integrating mindfulness into the school curriculum currently supersedes the evidence (Greenberg & Harris, 2012).

Mindfulness means "paying attention in a particular way: on purpose, in the present moment, and non-judgementally" (Kabat-Zinn, 1994, p.4). In mindfulness programmes, individuals are taught to focus on the present moment using an "anchor" such as the breath. Rather than ruminating on the past or worrying about the future, a focus on the meditative anchor helps individuals to "tie their mind" to the present moment (Shonin, Van Gordon, Griffiths, 2014, p. 368). Individuals are then encouraged to notice thoughts, feelings, physical sensations, sights and sounds as they unfold, on a moment by moment basis, without judging the experience as bad or good (Zenner, Herrnleben-Kurz & Walach, 2014). This experience of mindfulness can be directly contrasted with a state of mindlessness whereby individuals rarely notice the present moment but instead, are "swept away" by a current of intrusive thoughts and distressing emotions (Weare, 2013). By operating on "auto pilot", mindless individuals tend to make the same decisions habitually and automatically (Williams and Penman, 2011). Mindfulness, on the other hand, encourages present moment awareness which gives individuals a "mental space" where they can make choices about how to respond.

Mindfulness practice originates in Buddhism and dates back more than 2500 years. Over the last 30 years however, mindfulness has gained secular approval and has grown in popularity in the West (Brown, Ryan & Creswell, 2007). For adult populations, there is growing evidence that mindfulness can reduce relapse rates for depression (Kuyken et al., 2015), reduce chronic stress and anxiety (Grossman, Neimann, Schmidt & Walach, 2004) as well as reducing physical health symptoms such as pain (Morone, Greco & Weiner, 2008). Over the last decade, interest in the application of mindfulness to children and young people has increased with initial evidence suggesting that it may be an appropriate tool for promoting well-being

(Burke, 2010). However, there are still many gaps within the literature and questions that remain unanswered. This thesis aims to fill some of those gaps by providing an evaluation of the Mindful Attention Programme (MAP) in a UK context.

1.2 Orientation to Thesis Content

After this introductory chapter, the thesis comprises three further sections. Chapter 2 is a systematic literature review, which explores the effectiveness of universal cognitive-behavioural programmes for reducing anxiety in children and adolescents. Within this review, mindfulness was included as a "third wave" cognitive-behavioural approach based on research suggesting that mindfulness is fundamentally related to traditional CBT and shares a number of therapeutic principles (Ruiz, 2012). Fifteen studies were selected to help address the review question and were evaluated against the weight of evidence framework (Gough, 2007). This provided information about methodological quality, relevance of design as well as the appropriateness of the study focus to the research question. The review concluded that universal cognitive-behavioural programmes can be effective in reducing levels of anxiety among children and young people. The results of this review also showed that for "high risk" children (i.e. those with clinical levels of anxiety at pre-test); universal programmes can be comparable in effectiveness to targeted interventions. For practising psychologists, this is a useful finding to be aware of given that universal programmes also have the added benefit of reducing stigmatisation and avoiding the need for expensive, time-consuming and imperfect screening procedures (Amburster, Andrews, Couenhoven, & Blau, 1999; Evans, 1999). Within this review, the largest effect size and strongest methodological quality rating was awarded to a "third-wave" cognitive-behavioural approach (i.e. a

mindfulness intervention). For a relatively new field, this was considered to be very promising. The review concluded by recommending future research in this area. It was also suggested that researchers explore the impact of home practice on therapeutic outcome as well as the mechanisms though which any effects occur. This provided a rationale for the current study.

Chapter 3 presents the empirical paper, a mixed-methods study which evaluated the Mindful Attention Programme (MAP). In the first phase of the research, a between groups design was used with a wait-list control group. One hundred and sixty two children aged 9-10 years completed measures of anxiety, negative automatic thoughts and mindfulness before and after the 8-week programme. The children were also asked to record the number of meditations that they completed at home. The results showed that the MAP did not have a significant effect on anxiety scores (p = 0.052) or the frequency of negative automatic thoughts (p = 0.055). It was found that the MAP had a significant effect on mindfulness scores, which increased over time (p = 0.02). There was no relationship between home practice (i.e. reported completion of meditations at home) and outcomes which is not in line with previous findings (Huppert & Johnson, 2010). This study also explored whether the MAP was able to effectively target children who showed clinical levels of anxiety at pre-test. It was found that the MAP did not have a significant effect on the "risk status" of children. This was a surprising finding given the conclusions drawn within the literature review.

The second phase of the research was included to further explore the initial findings. It included two parts: a follow-up questionnaire and focus groups. The follow-up

questionnaire was designed for the purpose of the study and contained two open-ended questions: “What makes it difficult to practice at home?” and “If one thing could make home practice easier, what would it be?” The results were analysed by content analysis (Hsieh & Shannon, 2005) and showed that there were a number of barriers to practising at home. This included distractions from others, other commitments and interests and perceived lack of time. The children made a number of recommendations with regard to making home practice easier. The most frequently cited response was access to a quiet space, followed by improved access to resources (e.g. computer, Wi-Fi) and additional opportunities within school. Clearly, further attention needs to be paid to this area if improved outcomes are to be observed. As a final part of the research project, three focus groups were facilitated and analysed using thematic analysis (Braun and Clarke, 2006). Three main themes were identified (reported change, mechanisms of change and home practice). In the first theme, children reported a reduction in worry, reduction in anger and reduction in physical tension. In the second theme, mechanisms of change were identified. It was found that the mechanisms of change are likely to differ for children and adults, suggesting that developmental level has an impact on how mindfulness is understood and applied. In the final theme, the benefits, difficulties and future of home practice were considered in further detail. For both parts of the research, results are discussed in detail and implications are considered.

Chapter 4 explores the dissemination and impact of the study findings. It starts with a discussion about the concepts of evidence-based practice and practice-based research, highlighting that Educational Psychologists (EPs) are well-placed to deliver evidence-based interventions and evaluate the effectiveness of these within the school context. In this study, taking this approach enabled the existing knowledge

base to be extended in a number of ways. In this chapter, the economic, societal and academic beneficiaries of the research are discussed in detail as well as the implications for professional practice. Given that this thesis makes a unique contribution to the field, the final part of the chapter considers the strategy for promoting the findings. This includes dissemination in academic publications (e.g. journals), non-academic publications (e.g. magazines) and at conferences (e.g. those organised by the British Psychological Society). Further details such as proposed abstracts, journals shortlisted for submission and a timeline for preparation are also included.

1.3 Epistemological Stance of Research

This section will consider the epistemological stance of the research, which influenced decisions regarding methodology, methods and data analysis techniques (Creswell, 2007). The importance of stating an epistemological standpoint is to ensure that others can see the assumptions that underpin a particular piece of research as well as the influences behind the decisions that were made (Holloway & Todres, 2003). Crotty (1998) suggests that each researcher should consider the following four elements: *epistemology, theoretical perspective, methodology and methods.* These four elements and interlinked as can be seen in the diagrammatic representation in Figure 1.1. This next section will explore each of these elements in relation to the current research study.

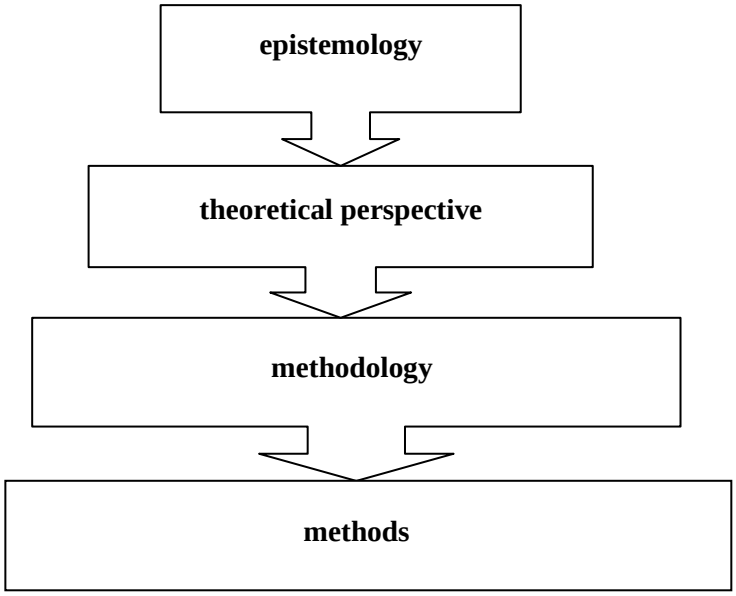

Figure 1.1. Four elements of a research process (adapted from Crotty, 1998)

Epistomology. Epistemology is a branch of philosophy concerned with the theory of knowledge. It outlines different worldviews which "influence the kinds of knowledge researchers seek and how they interpret the evidence they collect" (Morgan, 2007, p. 50). Whilst a number of different epistemological positions exist, Crotty (1998) outlines objectivism, constructionism and subjectivism as the major three worldviews. At one end of the spectrum, objectivism is the idea that an objective reality exists whether we are conscious of it or not, e.g., a tree still exists even if a person has never seen one. This means that objects are "out there" to be apprehended and understood (Rutz, 2000). Subjectivism is the polar opposite to objectivism and argues that there is no external or objective reality. Instead, meaning is imposed on objects by individuals (i.e. the object plays no role in the generation of meaning). In this study, a constructionist position was adopted. According to Crotty (1998), this is the dominant epistemology governing qualitative and quantitative research within psychology. It posits that meaning is constructed from an interaction between the

object and the individual. This means that different people can construct different meanings, even in relation to the same phenomena.

Constructionism was considered to be the most appropriate epistemological stance for this research for two reasons. Firstly, it has been suggested that psychological constructs (e.g. anxiety, negative automatic thoughts and mindfulness) cannot be observed directly (Wilson, 2009). Whilst this does not imply that they are not "real", the existence of a psychological construct is typically inferred from its manifestation (Rossiter, 2011, p.17). This implies a role for the researcher in "inferring" meaning and suggests that knowledge about a particular psychological phenomenon is therefore constructed. The second reason that this study adopts a constructionist stance is that the views of the children were of great interest – both in the follow-up questionnaire and within the focus groups. This research recognises that the children will have constructed their own realities through interactions with their social world (i.e. their school context, their community, their peer group and their families). This research therefore accepts that there is not a single, quantifiable truth that is "out there" to be measured and understood.

Theoretical Perspective. Mertens (2005) outlines four theoretical perspectives: post-positivist, constructivist, transformative and pragmatic. In a similar way to the epistemological stances, theoretical perspectives can be placed on a continuum (as shown in Figure 1.2. Post-positivism at one of the end of the spectrum and is closely linked to the epistemological stance of objectivism. This perspective suggests that all sources of knowledge must be empirical i.e. open to be observed, directly or indirectly, by others. At the other end of the spectrum is constructivism which is closely linked to the epistemological stance of constructionism. This perspective

suggests that people do not locate or acquire knowledge. Instead, they interact with the world which allows them to construct their own meanings about "truth" and "reality" (Willig, 2001). The question of whether the two theoretical perspectives can be combined has been a source of controversy and debate within the literature (Guba & Lincoln, 1989; Leininger, 1994). Purists argue that these perspectives are based on mutually exclusive assumptions about knowledge and the nature of reality. The "incompatibility thesis" (Howe, 1988) suggests that these perspectives should not be combined for this exact reason. Pragmatics on the other hand, argue that researchers should be able to switch between different theoretical perspectives. Rather than making decisions (e.g. about methodologies) based on a particular theoretical perspective, pragmatics argue that researchers should take a practical approach and select methodologies that will provide the greatest insight into the research questions (Tashakkori & Teddlie, 1998).Whilst this approach is typically well-suited to mixed-methods methodologies (Tashakkori & Teddlie, 2003), a number of issues has been raised with regard to the pragmatic perspective. Firstly, it has been argued that pragmatics underestimate the actual influence of philosophical assumptions on research methods. According to Henry, Julnes and Mark (1998), epistemological assumptions are real properties of researchers and inevitably influence the actions and decisions that they make. This is because they are "implicit and not easily abandoned or changed" (Maxwell & Mittapalli, 2010). The researcher agreed with these tenants and therefore adopted a critical realist perspective, as opposed to a pragmatic perspective. It should also be noted that critical realism is starting to receive greater attention within the mixed methods community (Maxwell & Mittapalli, 2010; McEvoy & Richards, 2006).

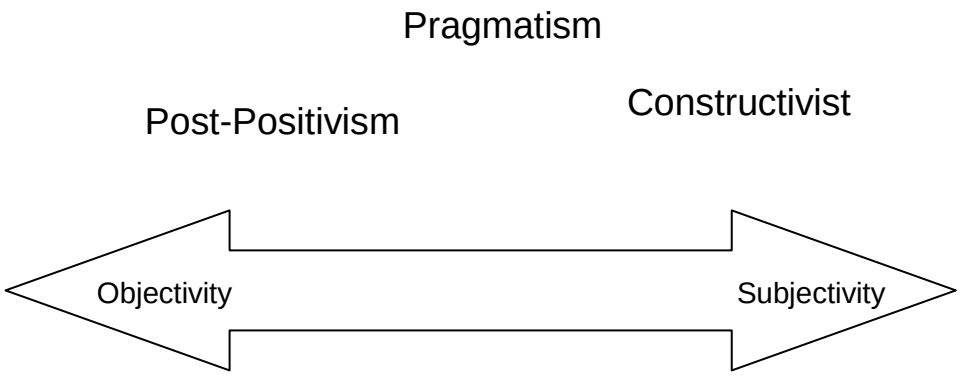

Figure 1.2. The continuum of theoretical perspectives

Benton and Craib (2001) recognise four key features of a critical realism (i) external realities exist (ii) there are "variable means of representation" which means that different people may have a different view of the external reality (iii) the surface characteristics of a particular phenomenon can distort its true meaning and (iv) since realities exist but can be misleading on the surface, there is always the potential for our knowledge about the world to be corrected. In this study, this means that any conclusions are "tentative" and reflect a "probable truth". This is because true meaning could be hidden whilst future research could also reshape the current understanding.

Critical realism was considered to be the most appropriate theoretical perspective for this research for a number of reasons. Firstly, it acknowledges that a reality exists – whether it is directly observable or not. This is consistent with the arguments made above with regard to psychological constructs. Importantly however, critical realists argue that phenomena that we cannot see should still be subjected to scientific exploration (Edwards, O'Mahoney & Vincent, 2014). Secondly, critical realists

believe that phenomena cannot be studied in isolation. This is because one needs to take account of the causal mechanisms that produce observable events (De Souza, 2014) as well as the contexts in which they occur (Edwards, O'Mahoney & Vincent, 2014). This is shown in Figure 1.3. Thirdly, critical realism acknowledges that different people can construct different realities (Benton and Craib, 2001). Within this study, an important aspect was attempting to understand change from the perspectives of the children and therefore, exploring their own "truths" about mindfulness and its possible benefits.

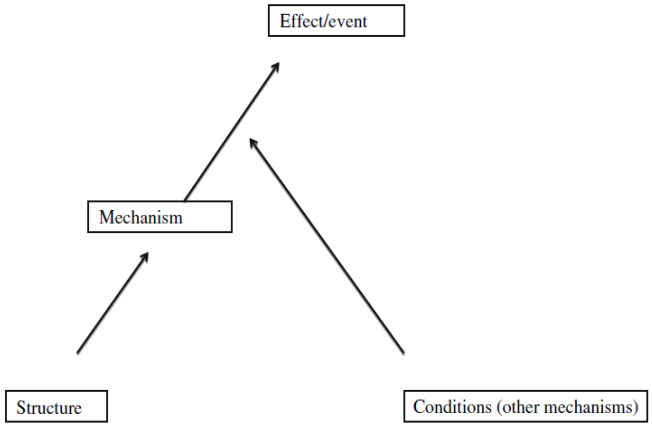

Figure 1.3. The critical realist view of causation (Sayer, 2000).

Methodology. The term "methodology" is often used interchangeably with "method". Within this section, methodology is used to refer to the strategy or approach that the researcher has selected. In contrast, the term "methods" is used to refer to the concrete techniques and procedures that are used within the research. Both the "methodology" and the "methods" are influenced by the theoretical position. In this study, a mixed methods approach was adopted. Within the literature,

it is often reported that using a combination of quantitative and qualitative approaches can be a methodological "minefield" because of the complex epistemological issues that are involved (Blaikie, 1991; McEvoy & Richards, 2006). However, one of the benefits of critical realism is that it welcomes the combination of qualitative and quantitative methodologies, recognising that this can provide deeper levels of explanation and understanding (McEvoy & Richards, 2006; Zachariadis, Scott & Micheal, 2010; Tashakkori & Teddlie, 2010).

Methods. Initially, a between groups design was used with a wait-list control group. Within this, standardised measures were used to explore the impact of a mindfulness intervention on anxiety levels, frequency of negative automatic thoughts and levels of mindfulness. Whilst many critical realists would reject the use of experimental designs to infer causation, some causal models have been proposed by critical realist thinkers which apply directly to this study. Pawson, Greenhalgh, Harvey and Walshe (2005) suggest that an outcome O happens when X influences Y in the context of C and with an understanding of the causal mechanisms M. Within this study, due consideration was given to the research context and the impact that this may have had on the overall findings. For example, details are provided about the schools recruited for the study, the demographics of the participants as well as the intervention itself. This helps to position the findings within a wider context. Understanding the casual mechanisms that underpin psychological change was also an important part of the research. As stated by O'Mahoney and Vincent (2014, p.10), a "key commitment of critical realist research is that there are deeper levels awaiting discovery". This was a key aspect of the second phase of the research, which was

achieved through two methods: (i) an open-ended questionnaire and (ii) focus groups.

To conclude, this research adopts an epistemological stance of constructionism and theoretical stance of critical realism. As highlighted by Crotty (1998), these standpoints inform the methodology and methods used. In this research, a mixed methodology was used whilst the method of data collection was standardised questionnaires, focus groups and an open-ended questionnaire.

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Chapter 2: How effective are universal, cognitive-behavioural programmes for reducing anxiety in children and adolescents?

2.1 Summary

This systematic literature review explores the effectiveness of school-based, universal cognitive-behavioural programmes for reducing anxiety in children. Fifteen studies were selected to help address the review question and were evaluated using the weight of evidence framework (Gough, 2007). Overall, the results were promising with effect sizes ranging from small-medium. Several studies also included follow-up data, with encouraging results. This suggests that universal cognitive-behavioural programmes may have a preventative impact. For "high-risk" children (those with elevated levels of anxiety at pre-test), universal programmes also show promising results with effect sizes showing comparability to research using targeted populations. However, future research with sufficient sample sizes, recorded implementation fidelity and triangulated data must be conducted before cognitive-behavioural programmes become widely disseminated into classrooms.

2.2 Introduction

2.2.1 Childhood Anxiety

Anxiety disorders are among the most common psychiatric disorders in school-aged children and adolescents, with international prevalence rates averaging between 4% and 25% (Neil & Christensen, 2009). According to the American Psychiatric Association (2000), anxiety can develop into a disorder when (i) it is extreme and uncontrollable, (ii) it is in response to no specific threat and (iii) is associated with a varied and intense range of physical and affective symptoms as well as changes in behaviour and cognition. Whilst many children present with these difficulties, the number of children receiving mental health services in the UK is low (Stallard, 2010)

and waiting lists are long (Kurtz, 2004). In the absence of externalising symptoms, anxiety disorders can also remain under-identified (Briesch, Hagermoser Sanetti & Briesch, 2010). Without effective treatment, anxiety can have a detrimental effect on children (Keller, Lavori, Wunder, Beardslee, & Schwartz, 1992). This can include damaging effects on concentration, school adjustment and motivation (McGee & Stanton, 1990; Ma, 1999; Rodgers & Dunsmuir, 2013). It can also progress into adulthood and affect job satisfaction, health status and life satisfaction (Keller, Lavori, Wunder, Beardslee, & Schwartz, 1992; Linn, Yager, Cope & Leake, 1985). Clearly, finding evidence-based interventions to support childhood anxiety is crucial.

In light of the increasing demand on Child and Adolescent Mental Health Services (CAMHS), there is a current focus on preventative, school-based mental health interventions (Department for Children Schools and Families, 2008; Stallard, Udwin, Goddard & Hibbert, 2007). At present, Cognitive Behavioural Therapy (CBT) is the most commonly used psychosocial intervention for anxiety among adults and the most empirically supported therapeutic approach for children and adolescents (Australian Psychological Society, 2010) but how well is this intervention being translated into schools?

2.2.2 Cognitive Behavioural Therapy (CBT)

CBT is a psychosocial treatment grounded on the notion that "cognitions or thoughts mediate our emotional and behavioural responses" (Scarpa & Lorenzi, 2013, p.4). As an approach, it has two main influences: behavioural therapy (Wolpe, 1958) and

cognitive therapy (Beck, Rush, Shaw & Emery, 1979). To give a greater conceptual understanding, this section will briefly review the history of this approach.

The so-called 'first wave' of psychotherapy was characterised by a focus on classical conditioning and operant learning (Pavlov, 1897; Skinner, 1938) and took the view that the human mind was not directly observable and therefore not amenable to scientific study. Using approaches such as systematic desensitisation this 'first wave' became successful, especially with anxiety disorders such as phobias and obsessional compulsive disorder (Westbrook, Kennerley & Kirk, 2007). However, in the 1960s, a revolutionary challenge to traditional behavioural therapy arrived based on the view that behaviourist principles alone were not enough to account for human cognition (Hayes, Luoma, Bond, Masuda & Lillis, 2006).

The 'second wave' of psychotherapy was characterised by an additional focus on cognitions and information processing. Broadly speaking, cognitive models of psychopathology assume that an individual's belief systems and assumptions assert a strong influence on both mood and behaviour by influencing how information is perceived, encoded, and recalled (Beck, Wright, Newman & Liese, 1993). Research trials showing that cognitive therapy was effective for the treatment of depression (Gloaguen, Cottraux, Cucherat & Blackburn, 1998) and anxiety (Beck, 1979) fuelled the revolution. Over the succeeding years, behaviour therapy and cognitive therapy grew together to form CBT.

In the past decade, there has been an increasing interest in mindfulness and acceptance-based treatments for psychopathology; particularly anxiety disorders

(Evans et al. 2008; Forman, Herbert, Moitra, Yeomans & Geller, 2007). These approaches have been coined ‘third wave’ CBT interventions, with research suggesting that they are fundamentally related to traditional CBT and share a number of therapeutic principles. Evidence in the adult population also suggests that Mindfulness-Based Cognitive Therapy (MBCT; Teasdale, Segal & Williams, 1995) and Acceptance and Commitment Therapy (ACT; Hayes, Strosahl & Wilson, 1999) are as effective as traditional CBT in the treatment of psychopathology (Hoffman, Sawyer & Fang, 2010). As a result of these findings, it has been argued that researchers could temporarily abandon the term ‘third wave’ and view CBT as a family of interventions rather than as one single treatment. This viewpoint is supported by Ruiz (2012, p.1), who states that “it is not an easy task to define CBT because diverse theories, principles, models and techniques can be categorised within this label”. This literature review will adopt a similar stance and review traditional CBT and ‘third wave’ interventions collectively as “cognitive-behavioural programmes”. However, this review will focus purely on mindfulness as a ‘third wave’ intervention. This is because current research using ACT has focused primarily on targeted groups of children and not yet extended to a universal application (Swain, Hancock, Dixon, Koo & Bowman, 2013; Livheim et al., 2014). The next section will consider the psychological underpinnings of cognitive-behavioural programmes, including mindfulness as a third wave intervention.

2.2.3 Psychological Underpinnings

As a goal-orientated approach, CBT is based on the premise that modifying cognitions will reduce emotional distress and maladaptive behaviors (Westbrook, Kennerley & Kirk, 2007). To do this, CBT interventions often utilise: (a)

psychoeducation; (b) self-monitoring of symptoms; (c) relaxation/breathing retraining; (d) cognitive restructuring; (e) behavioural experiments; (f) imaginal and in vivo exposure; (g) weaning off safety signals; and (h) response and relapse prevention (James, Soler & Weatherall, 2005) Theoretically, this approach is based on the idea that individuals have the capacity to reflect, explore thought processes and self-evaluate (Banudra, 1986). Traditional CBT is also based on the premise that the beliefs individuals hold about their capabilities can have a strong influence on their cognitions and behaviour (Usher & Pajares, 2008). Theoretically therefore, increasing feelings of self-efficacy, supporting positive self-reflection and modelling adaptive coping strategies, may help to achieve the goal of changing a behaviour, thinking pattern or belief.

MBCT, a direct extension of CBT, is described as "paying attention in a particular way: on purpose, in the present moment, and non-judgementally" (Kabat-Zinn, 1994, p.4). In MBCT, the focus is less about changing the content of thoughts but rather about "decentering" from thoughts and noticing their transient nature. This concept of "decentering" is similar to the technique of "distancing" in traditional CBT, which allows an individual to work more objectivity and see thoughts as "just thoughts", rather than reflections of truth or reality (Beck, 1979; Semple & Lee, 2007). By adopting a present moment awareness (Kabat-Zinn, 2003), mindfulness also offers individuals with a "mental space", where their attentional focus is less susceptible to being hijacked by a train of inaccurate and distress-provoking cognitions (Greeson & Brantley, 2009). It is hoped that this mental space also allows individuals to view situations from multiple perspectives (Ritchart & Perkins, 2000), respond to difficult emotions productively (Greenberg & Harris, 2012), interact well with others and

self-regulate their behaviour (Roeser & Peck, 2009). In this sense, change can be evoked through mindfulness practice, although it is not regarded as a "goal orientated" approach. Theoretically, mindfulness is rooted in elements of human consciousness – awareness and attention (Kabat-Zinn, 1990). Mindfulness has also been considered alongside theories of metacognition, information processing, emotional regulation and self-regulation (Brown, Ryan & Creswell, 2007), which shares some overlap with traditional CBT. However, Kabat-Zinn (2003) urges for a careful definition of the theoretical basis for mindfulness and highlights the possible danger of failing to recognise subtle yet deeply important features from the original Buddhist practice.

Theoretically, mindfulness and CBT share significant commonalities as well as some subtle differences. Firstly, both approaches encourage an awareness of cognitions and recognise that these are the precursor for emotions. Secondly, both approaches encourage individuals to relate differently to their thoughts and emotions, and offer techniques to regulate these experiences. Therapeutically, both approaches also emphasise the need for practice, self-compassion and validation. However, the approaches show some subtle differences in terms of how to adjust to thoughts and feelings, with the major difference being cognitive restructuring (CBT) compared to acceptance (mindfulness). Despite this, many researchers have argued that traditional CBT and 'third wave' interventions are "fundamentally related" (Hoffman, Sawyer & Fang, 2010) and are more similar than distinct (Arch & Craske, 2008).

2.2.4 Modes of Delivery

There are a number of different ways in which cognitive-behavioural programmes can be delivered. Over the past decade, there has been an increasing interest in anxiety prevention over more traditional treatment approaches (Rapee, Kennedy, Ingram, Edwards & Sweeney, 2005). According to Lowry-Webster, Barrett and Dadds (2001), prevention programmes can take three forms; selective, indicated and universal. In indicated interventions, children are screened and treatment is provided to those who have detectable symptoms of mental disorders but may not yet meet diagnostic criteria. In selective interventions, individuals who present with a greater risk of developing a mental disorder (based on biological or social risk factors) are targeted. In universal interventions, treatment is provided to all children, regardless of their risk status. This approach is able to reach a broad range of children, ranging from those at-risk to those with sub-clinical symptoms. In a school context, universal delivery can also reduce stigmatisation, enhance peer support and avoid the need for expensive, time-consuming and imperfect screening procedures (Amburster, Andrews, Couenhoven, & Blau, 1999; Evans, 1999). This makes it a desirable preventative approach.

According to Craske and Zucker (2001), early intervention is a valuable endeavour because behaviour is more malleable in young children. It has also been proposed that anxiety prevention programs could help to avoid the development of depression in some people, with anxiety typically preceding co-morbid depressive disorders (Neil & Christensen, 2009). Given the increasing demand on CAMHS and a lack of capacity to meet these requirements (Stallard, Udwin, Goddard & Hibbert, 2007), prevention programmes may also ease the shortage of treatment services and target

hard to reach population (Barrett & Pahl, 2006). This review will focus on universal prevention programmes in schools.

2.2.5 Relevance of Review

Given the recent interest in 'third wave' CBT interventions and the wealth of research exploring traditional CBT, this literature review will inform current understanding about these approaches in the treatment of childhood anxiety. This is particularly relevant given that 'social, emotional and *mental health'* has recently become one of the four categories of SEN (Department for Education & Health, 2013). With an increasing focus on the EP as a therapeutic provider (MacKay, 2007), understanding the most recent research in this area is also considered extremely topical, and relevant to EP practice.

A literature search was conducted on 6th August 2015 and revealed that this review question has not been previously explored. In a previous review, Briesch, Hagermoser Sanetti and Briesch (2010) explored one intervention within the CBT family; FRIENDS for Life. This review found that FRIENDS for Life was effective in reducing anxiety symptoms in both universal and targeted populations of children. However, since that time several more studies have been published (Rodgers & Dunsmuir, 2013; Essau, Conradt, Sasagawa & Ollendick, 2012) and understanding around preventative CBT programmes has developed. Furthermore, the review by Briesch, Hagermoser Sanetti and Briesch (2010) was specific to the FRIENDS for Life intervention and as a result, did not include 'third wave' preventative CBT programmes.

A review by Neil and Christensen (2009) explored the efficacy and effectiveness of anxiety prevention programmes, categorising many of the approaches as CBT. However, this review focused on randomised controlled trials (RCTs) only, which are often difficult to achieve in schools. Neil and Christensen (2009) also reported the work of Hains (1992) as a universal programme, with an effect size of $d = 1.13$ from pre-post intervention. However, this review argues that this study was incorrectly identified within the universal category and used to skew the results. This is because the participants in the Hains' (1992) paper were volunteers and self-referred themselves for the study. This may introduce a higher than average commitment to the programme and pre-existing interest in reducing anxiety symptomology. This review will therefore address a gap in current literature and ask: how effective are universal, cognitive-behavioural programmes for reducing anxiety in children and adolescents?

2.3 Critical review of the evidence base

2.3.1 Literature Search

An initial search was conducted on 6th August 2015 using the electronic databases PsycINFO, Medline (EBSCO) and ERIC (Educational Resource Index and Abstracts). As mindfulness based interventions do not directly contain 'CBT' in the title, it was deemed appropriate to conduct two separate searches. The first search located traditional CBT interventions. The second search identified 'third wave' CBT interventions.

Table 2.1

Search terms applied to PsycINFO, Medline and ERIC

Search 1	**Search 2**
Cognitive behav* therapy or CBT Prevent* School-based Anxi*	Mindfulness Prevent* School-based Anxi*

An "all fields" search was conducted separately using the search terms described above. The findings from the searches were then combined using "and" to locate the relevant articles. Figure 2.1 outlines the search process.

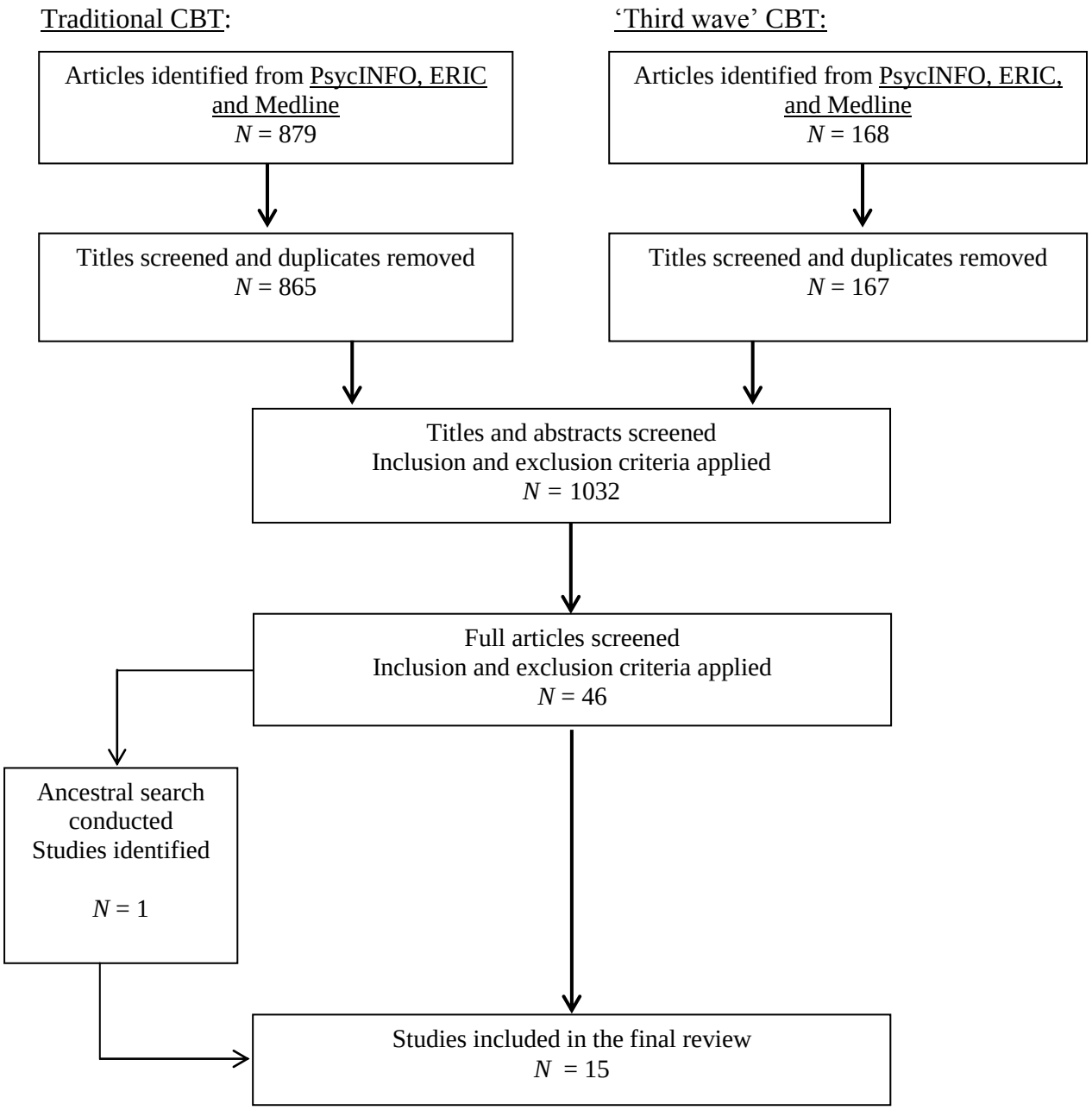

Figure 2.1. Literature screening process

2.3.2 Inclusion and Exclusion Criteria

Articles were screened used the inclusion and exclusion criteria in Table 2.2. References for the 32 studies that were excluded based on a full text analysis can be found in Appendix A.

Table 2.2

Inclusion and exclusion criteria for studies being considered for this review

	Inclusion criteria	**Exclusion criteria**
1.	Study is in a peer reviewed journal	Study is not in a peer reviewed journal
2.	Study contains primary empirical data	Study does not collect primary empirical data (e.g. review article)
3.	Study is written in English	Study is not written in English
4.	The intervention is delivered by a practitioner (e.g. teacher, psychologist)	The intervention is delivered by a computer
5.	The intervention is delivered in schools	The intervention is delivered in a clinical setting
6.	The study collects data on overall anxiety levels	The study does not collect data on anxiety or collects data in one specific area e.g. PTSD, social phobia
7.	The design includes a wait-list or active control group	There is no control group or qualitative data is obtained
8.	The study reports pre and post data	The study does not report pre and post data e.g. follow-up study
9.	The intervention is CBT or mindfulness	The programme has been combined with another intervention (e.g. yoga)
10.	The intervention is delivered universally	The programme is indicated or selective
11.	The intervention is child-based (although it may include parent components)	The intervention is parent-based
12.	The intervention is targeted at reducing anxiety symptomology or stress	The intervention is targeted at another outcome e.g. depression

2.3.3 Final studies selected for review

Fifteen papers were included in the final review. The references for these papers can be found in Table 2.3. As can be seen in this table, two studies were led by Miller in 2011. For the purpose of this review, the first study listed in Table 2.3 will be referred to as Miller et al. (2011a) whilst the second study listed in Table 2.3 will be referred to as Miller et al. (2011b). It must be noted however, that these are two separately published articles.

2.3.4 Weight of Evidence (WoE)

The fifteen selected studies were appraised using the Weight of Evidence (WoE) approach (Gough, 2007). This provides extensive, but clear criteria that enable the review process to be as systematic as possible. WoE is designed to appraise studies based on methodological quality (WoE A); methodological relevance (WoE B) and appropriateness of the study focus to the review question (WoE C). By averaging the weights for each factor, an overall WoE is produced (WoE D). For an overview of the ratings received by each study, see Table 2.4.

The methodological quality (WoE A) of each study was rated using generally accepted criteria for evaluating evidence (Gersten et al. 2005). In this review, the Gersten et al. (2005) protocol was selected as it helps to evaluate experimental and quasi-experimental work in educational settings. Full coding protocols can be found in Appendix B. The methodological relevance and appropriateness of the study were weighted according to the protocol described in Appendix C. This is specific to the

current review and has been designed informatively by the reviewer. A rationale for each of these ratings received by the studies can be found in Appendix D.

Table 2.3

List of studies eligible for the final review question

Collins, S., Woolfson, L. M., & Durkin, K. (2013). Effects on coping skills and anxiety of a universal school-based mental health intervention delivered in Scottish primary schools. *School Psychology International*, *35*(1), 85-100
Anticich, S. A., Barrett, P. M., Silverman, W., Lacherez, P., & Gillies, R. (2013). The prevention of childhood anxiety and promotion of resilience among preschool-aged children: a universal school based trial. *Advances in school mental health promotion*, *6*(2), 93-121.
Essau, C. A., Conradt, J., Sasagawa, S., & Ollendick, T. H. (2012). Prevention of anxiety symptoms in children: Results from a universal school-based trial. *Behavior therapy*, *43*(2), 450-464.
Miller, L. D., Laye-Gindhu, A., Liu, Y., March, J. S., Thordarson, D. S., & Garland, E. J. (2011). Evaluation of a preventive intervention for child anxiety in two randomized attention-control school trials. *Behaviour research and therapy*, *49*(5), 315-323.
Miller, L. D., Laye-Gindhu, A., Bennett, J. L., Liu, Y., Gold, S., March, J. S., & Waechtler, V. E. (2011). An effectiveness study of a culturally enriched school-based CBT anxiety prevention program. *Journal of Clinical Child & Adolescent Psychology*, *40*(4), 618-629
Miller, L. D., Short, C., Garland, E. J., & Clark, S. (2010). The ABCs of CBT (Cognitive Behavior Therapy): Evidence-Based Approaches to Child Anxiety in Public School Settings. *Journal of Counselling & Development*, *88*(4), 432-439.
Pahl, K. M., & Barrett, P. M. (2010). Preventing anxiety and promoting social and emotional strength in preschool children: A universal evaluation of the Fun FRIENDS program. *Advances in School Mental Health Promotion*, *3*(3), 14-25
Mostert, J., & Loxton, H. (2008). Exploring the effectiveness of the FRIENDS program in reducing anxiety symptoms among South African children. *Behaviour Change*, *25*(2), 85-96
Lock, S., & Barrett, P. M. (2003). A longitudinal study of developmental differences in universal preventive intervention for child anxiety. *Behaviour Change*, *20*(4), 183-199.
Barrett, P. M., Lock, S., & Farrell, L. J. (2005). Developmental differences in universal preventive intervention for child anxiety. *Clinical Child Psychology and Psychiatry*, *10*(4), 539-555
Barrett, P., & Turner, C. (2001). Prevention of anxiety symptoms in primary school children: Preliminary results from a universal school-based trial. *British Journal of Clinical Psychology*, *40*(4), 399-410
Lowry-Webster, H. M., Barrett, P. M., & Dadds, M. R. (2001). A universal prevention trial of anxiety and depressive symptomatology in childhood: Preliminary data from an Australian study. *Behaviour Change*, *18*(1), 36-50
van de Weijer-Bergsma, E., Langenberg, G., Brandsma, R., Oort, F. J., & Bögels, S. M. (2014). The effectiveness of a school-based mindfulness training as a program to prevent stress in elementary school children. *Mindfulness*, *5*(3), 238-248.
Sibinga, E., Perry-Parrish, C., Chung, S. E., Johnson, S. B., Smith, M., & Ellen, J. M. (2013). School-based mindfulness instruction for urban male youth: A small randomized controlled trial. *Preventive medicine*, *57*(6), 799-801
Rose, H., Miller, L., & Martinez, Y. (2009). " FRIENDS for Life": The Results of a Resilience-Building, Anxiety-Prevention Program in a Canadian Elementary School. *Professional School Counselling*, *12*(6), 400-407.

Table 2.4

Weight of Evidence Summary

Study	Methodological quality (WoE A)	Methodological relevance (WoE B)	Topic relevance (WoE C)	Overall weighting (WoE D)
Collins et al. (2013)	Medium (2)	Low (1)	Medium (2)	Medium
Anticich et al. (2013)	Medium (2)	Low (1)	Medium (2)	Medium
Essau et al. (2012)	Medium (2)	Low (1)	Medium (2)	Medium
Miller et al. (2011a)	Medium (2)	Low (1)	Medium (2)	Medium
Miller et al. (2011b)	Medium (2)	Low (1)	Medium (2)	Medium
Miller et al. (2010)	High (3)	Low (1)	Low (1)	Medium
Pahl and Barrett (2010)	High (3)	Low (1)	Medium (2)	Medium
Mostert & Loxton (2008)	Very Low (0)	Low (1)	Medium (2)	Low
Lock and Barrett (2003)	Low (1)	Medium (2)	High (3)	Medium
Barrett et al. (2005)	Medium (2)	Low (1)	Medium (2)	Medium
Barrett & Turner (2001)	Low (1)	Medium (2)	Medium (2)	Medium
Lowry-Webster et al. (2001)	High (3)	Medium (2)	Medium (2)	Medium
van de Weijer-Bergsma et al. (2014)	Low (1)	Medium (2)	Medium (2)	Low
Sibinga et al. (2013)	High (3)	High (3)	Medium (2)	High
Rose et al. (2009)	Very Low (0)	Low (1)	Low (1)	Low

2.4 Critical Review of Studies

2.4.1 Overview of Studies

For the purpose of this review, an overview of the studies is provided in Table 2.5. The information that is captured within this table will be referred to throughout this section, where a critical review of the studies will be presented.

2.4.2 Participants

The majority of studies included in this review were conducted in Australia (Anticich, Barrett, Silverman, Lacherez & Gillies, 2013; Pahl & Barrett, 2010; Lock & Barrett, 2003; Barrett, Lock & Farrell, 2005; Barrett & Turner, 2001; Lowry-Webster, Barrett & Dadds, 2001). Additional work has been conducted in Canada (Miller et al., 2011a; Miller et al., 2011b; Rose, Miller & Martinez, 2009), USA (Miller, Short, Garland & Clark, 2010; Sibinga et al., 2013), South Africa (Mostert & Loxton, 2008), Amsterdam (van de Weijer-Bergsma, Langenberg, Brandsma, Oort & Bögels, 2014) and Germany (Essau, Conradt, Sasagawa & Ollendick, 2012). Only one of the studies included in this review was conducted within the United Kingdom (Collins, Woolfson & Durkin, 2013). A degree of caution should therefore be taken before committing resources to universal cognitive-behavioural programmes in the UK, with pilot studies recommended.

The age of participants in this review ranged from 4-16 years, therefore encompassing pre-school, primary and secondary-aged children. To be truly preventative, it is vital that cognitive-behavioural interventions are delivered prior to the onset of anxiety disorders. Two studies included in this review (Lock & Barrett, 2003; Barrett, Lock & Farrell, 2005) explored developmental differences in universal preventative programmes, finding that the anxiety symptoms of *primary school* children were more amenable to change. This is consistent with research showing that the age of onset for anxiety disorders is 11 years old (Kessler et al., 2005). Future research should therefore target this age group and provide children with skills that they can continue to use and benefit from once the intervention has finished.

Table 2.5

Summary of methodological designs

Authors	Participants	Country	Programme Details	Program Intensity	Anxiety Measures	Home Practice	Parent component
Collins, Woolfson and Durkin (2013)	*N* = 317 9-10 years	Scotland	Lessons for living: Think well, do well	10 x 1 hour sessions	Spence Children's Anxiety Scale (SCAS; Spence, 1998)	No	No
Anticich, Barrett, Silverman, Lacherez and Gillies (2013)	*N* = 488 4-7 years	Australia	Fun FRIENDS	10 x 1 hour sessions	Pre-school Anxiety Scale (PAS; Spence et al. 2001)	Yes- parents encouraged to reinforce skills at home	Yes – parents encouraged to attend two sessions
Essau, Conradt, Sasagawa and Ollendick (2012)	*N* = 638 9-12 years	Germany	FRIENDS for Life	10 x 1 hour sessions	Spence Children's Anxiety Scale (SCAS; Spence, 1998)	Yes – children given homework at the end of each session	Yes – parents were invited to attend four sessions
Miller et al., (2011a)	*N* = 253 9-12 years	Canada	FRIENDS for Life	9 x 1 hour sessions	Multidimensional Anxiety Scale for Children (MASC; March, 1997)	Not reported	No
Miller et al., (2011b)	*N* = 533 9-12 years	Canada	Culturally enriched FRIENDS for Life	9 x 1 hour sessions	Multidimensional Anxiety Scale for Children (MASC; March, 1997)	Yes – although described as an 'optional activity' for children	No
Miller, Short, Garland and Clark (2010)	*N* = 116 7-12 years	USA	Taming Worry Dragons	8 x 1 hour sessions	Multidimensional Anxiety Scale for Children (MASC; March, 1997)	Yes – children given homework at the end of each session	No
Pahl and Barrett (2010)	*N* = 263 4-6 years	Australia	Fun FRIENDS	9 x 1 hour sessions	Pre-school Anxiety Scale (PAS; Spence et al. 2001)	Yes- parents encouraged to reinforce skills at home	Yes – three parent information sessions
Mostert and Loxton (2008)	*N* = 46 12 years old	South Africa	FRIENDS for Life	10 x 1 hour sessions	Spence Children's Anxiety Scale (SCAS; Spence, 1998)	Not reported	No

Lock and Barrett (2003)	Grade 6 *N* = 733 9-10 years Grade 9 *N* = 401 14-16 years	Australia	FRIENDS for Life	10 x 1 hour sessions	Spence Children's Anxiety Scale (SCAS; Spence, 1998) Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978)	Not reported	No
Barrett, Lock and Farrell (2005)	Grade 6: *N* = 293 9-10 years Grade 9 *N* = 399 14-16 years	Australia	FRIENDS for Life	10 x 1 hour sessions	Spence Children's Anxiety Scale (SCAS; Spence, 1998)	Yes – homework encouraged and reviewed each session	Yes – parents were invited to attend four sessions
Barrett and Turner (2001)	*N* = 489 10-12 years	Australia	FRIENDS for Life	10 x 1 hour sessions	Spence Children's Anxiety Scale (SCAS; Spence, 1998) Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978)	Yes – homework encouraged and reviewed each session	Yes – parents were invited to attend four sessions
Lowry-Webster, Barrett and Dadds (2001)	*N* = 594 10-13 years	Australia	FRIENDS for Life	10 x 1 hour sessions	Spence Children's Anxiety Scale (SCAS; Spence, 1998) Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978)	Not reported	Yes – parents were invited to three sessions
van de Weijer-Bergsma et al. (2014)	*N* = 208 8-12 years	Amsterdam	MindfulKids	12 x 30 min sessions	Screen for Child Anxiety Related Emotional Disorders (SCARED: Bodden et al. 2009)	Yes – plus 5 minute of exercises daily in school	No
Sibinga et al. (2013)	*N* = 43 12-13 years	USA	Mindfulness-Based Stress Reduction (MBSR)	12 x 50 min sessions	Multidimensional Anxiety Scale for Children (MASC; March, 1997) Symptom Checklist-90R (Derogatis, 1994)	No	No
Rose, Miller & Martinez (2009)	*N* = 52 8-9 years	Canada	FRIENDS for Life	8 x 1 hour sessions	Multidimensional Anxiety Scale for Children (MASC; March, 1997)	No	No

The number of participants in the selected studies ranged from 43 (Sibinga et al., 2013) to 1134 (Lock & Barrett, 2003). This large number illustrates one of the benefits of a universal programme, whereby treatment is provided to all children regardless of their risk status. However, some studies within this review recruited a small number of participants and may have been underpowered. For example, Rose, Miller and Martinez (2009) recruited $n = 52$ and failed to find a significant reduction in anxiety symptoms. In future research, it will be important to conduct accurate power analyses beforehand so that an effect can be found, if it exists in the population.

Four studies did not provide enough information for an assessment of representativeness to be made (Miller, Short, Garland & Clark, 2010; Rose, Miller & Martinez, 2009; Miller et al., 2011a; Miller et al., 2011b). The representativeness of the samples among the other studies was variable. One study (Sibinga et al., 2013) was delivered in a free school for African-American boys from low-income backgrounds. Mosert and Loxton (2008) also report recruiting a mixed-sample from low-income backgrounds. Collins, Woolfson and Durkin (2013) recruited schools in "affluent suburbs" with a low percentage of children receiving free-school meals. Many other studies report recruiting children who were white and from middle-class backgrounds (Anticich, Barrett, Silverman, Lacherez & Gillies, 2013; Essau, Conradt, Sasagawa & Ollendick, 2012; Barrett, Lock & Farrell, 2005). The other five studies (van de Weijer-Bergsma, Langenberg, Brandsma, Oort & Bögels, 2014; Pahl & Barrett, 2010; Lock & Barrett, 2003; Barrett & Turner, 2001; Lowry-Webster, Barrett & Dadds, 2001) recruited schools representative of their local community. This diversity may make it difficult to unpick differential effects between groups.

When considering representativeness, it is also important to consider response rates. Seven studies included in this review (Miller, Short, Garland & Clark, 2010; Miller et al., 2011a; Miller et al., 2011b; Essau, Conradt, Sasagawa & Ollendick, 2012; Barrett, Lock & Farrell, 2005; van de Weijer-Bergsma, Langenberg, Brandsma, Oort & Bögels, 2014; Lock & Barrett, 2003) report data on the number of parents providing consent. The percentage of parents who refused consent ranged from .02% (van de Weijer-Bergsma, Langenberg, Brandsma, Oort & Bögels, 2014) to 32.17% (Miller et al., 2011a). Whilst ethical issues must remain paramount in research, it is noteworthy that consent refusal was often quite high. However, these higher percentages may be explained by the fact that "opt-in consent" was used for some studies. This approach asks parents/carers to sign a consent form and return it to the researcher. Unfortunately, this is linked to poor response rates and may mean that hard to reach populations do not receive treatment which counteracts some of the supposed benefits of a universal programme.

Language is an important aspect of cognitive-behavioural programmes as it enables children to communicate their thoughts and feelings and allows them to engage with the practices that are offered in the session. Many of the papers included in this review failed to report on the linguistic competencies of the children and in particular, the number of children who were not fluent in the resident country's language. Seven studies provided information about linguistic competence (Miller, Short, Garland & Clark, 2010; Miller et al., 2011a; Miller et al., 2011b; Pahl & Barrett, 2010; Mosert & Loxton, 2008; Barrett & Turner, 2001; van de Weijer-Bergsma, Langenberg, Brandsma, Oort & Bögels, 2014). Interestingly, Pahl and Barrett (2010) excluded children with language impairments and/or pervasive

developmental disorders from the statistical analysis. In contrast, Miller et al. (2011) included 21.5% of participants who did not speak English in the home. Whilst it is possible that some, if not all, of these children were competent English- users, this high percentage does raise possible questions with regard to the accessibility of the programme. It is conceivable that children who are not proficient in the resident country's language will benefit from the programme less. This could be of significant importance to schools that have a large representation of these children, as is the case in several UK schools.

2.4.3 Intervention

Thirteen of the studies included in this review used traditional CBT (Anticich, Barrett, Silverman, Lacherez & Gillies, 2013; Pahl & Barrett, 2010; Lock & Barrett, 2003; Barrett, Lock & Farrell, 2005; Barrett & Turner, 2001; Lowry-Webster, Barrett & Dadds, 2001; Miller et al., 2011a; Miller et al., 2011b; Rose, Miller & Martinez, 2009; Miller, Short, Garland & Clark, 2010; Mostert & Loxton, 2008; Essau, Conradt, Sasagawa & Ollendick, 2012; Collins, Woolfson & Durkin, 2013) and two studies explored mindfulness as a 'third wave' CBT intervention (van de Weijer-Bergsma, Langenberg, Brandsma, Oort & Bögels, 2014; Sibinga et al., 2013). Interestingly, eight of the traditional cognitive-behavioural interventions used FRIENDS for Life - a CBT intervention that is recognised by the World Health Organisation as effective in reducing anxiety among children and adolescents (Essau, Conradt, Sasagawa & Ollendick, 2012; Miller et al., 2011a; Mostert & Loxton, 2008; Lock & Barrett, 2003; Barrett, Lock & Farrell, 2005; Barrett & Turner, 2001; Lowry-Webster, Barrett & Dadds, 2001; Rose, Miller & Martinez , 2009). Two of the studies used Fun FRIENDS – a pre-school adaptation of the FRIENDS for Life

programme which draws upon play-based activities and experiential learning (Pahl & Barrett, 2010; Anticich, Barrett, Silverman, Lacherez & Gillies, 2013). One study used the FRIENDS for Life programme but made cultural adaptations to make the program more accessible to aboriginal children (Miller et al., 2011b). Two studies used other programmes that drew on traditional CBT principles (Collins, Woolfson & Durkin, 2013; Miller, Short, Garland & Clark, 2010). For the mindfulness interventions, one study (Sibinga et al., 2013) used an adaptation of the Mindfulness Based Stress Reduction (MBSR) programme whilst the other drew on the MindfulKids programme which is modelled after the MBSR and MBCT training for adults (van de Weijer-Bergsma, Langenberg, Brandsma, Oort & Bögels, 2014). Whilst these variations make it very difficult to measure efficacy, all studies provided clear descriptions of the programmes that were used, in either a narrative or table form. This was used to determine whether each programme met the core principles of mindfulness (Iyadurai, Morris & Dunsmuir, 2014) or the core principles of CBT (James, Soler & Weatherall, 2005) which was also reflected in their WoE C rating.

The total amount of time allocated to the intervention ranged from 6 hours to 10 hours (see Table 2.5). The inclusion of home practice was also variable with only eight programmes encouraging children to practise at home (see Table 2.5). Given that home practice is considered an integral part of both CBT (Kazantzis, Deane & Ronan, 2000) and mindfulness (Kabat-Zinn, 1994), this is surprising. Research has also shown that time spent engaging in home practice is significantly related to therapeutic outcome (Carmody & Baer, 2008). Unfortunately however, none of the programmes reported the extent to which children practised their skills at home.

Barrett and Turner (2001, p. 404) stated that children were required to "bring completed home activities to the following sessions". In contrast, Miller et al. (2011a) noted that just 46.2% of leaders reviewed homework from the previous session. This introduces a large amount of variability in the data. Given that home practice is a hallmark of both traditional CBT and mindfulness, future research should find ways of monitoring home practice or encouraging children to develop their skills. A good example of this comes from van de Weijer-Bergsma, Langenberg, Brandsma, Oort and Bögels (2014) who asked the class teacher to deliver 5 minute exercises with the class on non-session days. It is this type of structured activity that offers children and young people the opportunity to practice emotional regulation skills, which may ultimately lead to more positive outcomes.

There is growing evidence to suggest that the family unit can maintain anxiety through the modelling, prompting and rewarding of anxious behaviours. As a result, adding a parent component to cognitive-behavioural interventions has become increasingly popular (Barrett, Dadds & Rapee, 1996; Krohne & Hock, 1991). Six studies in this review included a parent component (see Table 2.5) although attendance was often described as "poor" (Barrett, Lock & Farrell, 2005; Pahl & Barrett, 2010). One exception to this was Essau, Conradt, Sasagawa and Ollendick (2012) who reported that 54% of parents participated in these sessions. Given the potential role of the family in supporting anxiety, future research should place a stronger emphasis on engaging parents/carers in school-based activities.

Six studies in this review asked teachers to deliver the intervention (Anticich, Barrett, Silverman, Lacherez & Gillies, 2013; Miller et al., 2011a; Miller et al., 2011b; Miller, Short, Garland & Clark, 2010; Lowry-Webster, Barrett & Dadds, 2001; Rose, Miller & Martinez, 2009). Four studies utilised doctoral psychology students and trained psychologists (Essau, Conradt, Sasagawa & Ollendick, 2012; Pahl & Barrett, 2010; Lock & Barrett, 2003; Barrett, Lock & Farrell, 2005). Two studies involved a comparative element and asked both psychologists and teachers to deliver the intervention. In the mindfulness programmes, experienced mindfulness practitioners delivered the intervention. One study (Mostert & Loxton, 2008) did not report who delivered the CBT intervention. All studies were conducted during the regular school day which provides great promise for the integration of mental health interventions within the existing school system.

In this review, the training providers were not always specified and the training workshops varied in length between one and three days. The only exception to this is the mindfulness programmes, where an "embodiment in the qualities of mindfulness" (Crane et al., 2012, p.80) is considered an essential component of competence. According to Iyadurai, Morris and Dunsmuir (2014), this "embodiment" derives from an individual's own mindfulness practice, alongside completion of an eight-week training course in MBSR or MBCT. The training required to deliver the intervention is where traditional CBT and mindfulness differ slightly. Further work will be required to ascertain whether teachers are able to deliver effective and sustainable mindfulness interventions in schools.

According to Bishop et al., (2013), there is evidence that fidelity moderates programme outcomes. It is therefore important to determine the degree to which programmes were followed and carefully implemented (Durlak & DuPre, 2008). Twelve studies included in this review reported making fidelity checks (Miller, Short, Garland & Clark, 2010; Lowry-Webster, Barrett & Dadds, 2001; Mostert & Loxton, 2008; Anticich, Barrett, Silverman, Lacherez & Gillies, 2013; Lock & Barrett, 2003; Barrett & Turner, 2001; Miller et al., 2011a; Barrett, Lock & Farrell, 2005; Pahl & Barrett, 2010; Miller et al., 2011b; Essau, Conradt, Sasagawa & Ollendick, 2012; Collins, Woolfson & Durkin, 2013) which was reflected in their WoE A rating. However, only the latter seven of these studies reported full fidelity data. The concordance between manual content and intervention sessions ranged from 76.85%-98% among these studies. However, this was self-reported on almost all occasions which introduce threats to validity (Barker, Pistrang & Elliot, 2002). The lack of fidelity data from the remaining studies raises concern about the consistency of intervention delivery.

2.4.4 Measures

The most commonly used anxiety measure was the Spence Children's Anxiety Scale (SCAS; Spence, 1998), which was used as a primary measure in seven studies (see Table 2.5). The SCAS has demonstrated high internal consistency ($\alpha = .92$), high split half reliability ($r = .90$), adequate test-retest reliability ($r = .6$), as well as good convergent and divergent reliability (Spence, Barrett & Turner, 2003). Five studies used the Multidimensional Anxiety Scale for Children (MASC; March, Parker, Sullivan, Stallings & Connors, 1997) as a primary measure of anxiety. The MASC

has also demonstrated test-retest reliability of .79 in clinical samples and .88 in school-based samples. It has also demonstrated high internal consistency ($\alpha = .92$) as well as good convergent and divergent reliability (March, Parker, Sullivan, Stallings & Connors, 1997). Other measures used in this review include the Revised Child Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978), the Pre-school Anxiety Scale (PAS; Spence, Rapee, McDonald & Ingram, 2001), Screen for Child Anxiety Related Emotional Disorders (SCARED: Bodden, Bögels & Muris, 2009) and the Symptom Checklist-90R (Derogatis, 1994). All of these measures have adequate psychometric properties.

Twelve studies used self-report data to explore changes in children's anxiety over the course of the intervention (Anticich, Barrett, Silverman, Lacherez & Gillies, 2013; Lock & Barrett, 2003; Barrett, Lock & Farrell, 2005; Barrett & Turner, 2001; Lowry-Webster, Barrett & Dadds, 2001; Miller et al., 2011a; Miller et al., 2011b; Rose, Miller & Martinez, 2009; Miller, Short, Garland & Clark, 2010; Mostert & Loxton, 2008; Essau, Conradt, Sasagawa & Ollendick, 2012; Collins, Woolfson & Durkin, 2013). Three studies (van de Weijer-Bergsma, Langenberg, Brandsma, Oort & Bögels, 2014; Anticich, Barrett, Silverman, Lacherez & Gillies, 2013; Pahl & Barrett, 2010) drew on parent-report data although in the latter two cases, this was likely to be the result of the child's age. Whilst self-report represents the best methodology for assessing a large number of children in a relatively short time frame, there are issues surrounding reliability and validity. The lack of multi-source data in all of these studies may also lead to one-dimensional conceptualisation of anxiety. Despite this, it is promising to note that children did self-report changes to anxiety over time.

2.4.5 Research Design

The methodological quality of the studies was largely low to medium (See Table 2.5). As per the inclusion criteria, all studies had a control group however the *type* of control was variable across studies. Four studies used a "usual care" control whereby participants engaged in their normal curriculum such as PSE (Collins, Woolfson & Durkin, 2013; Barrett, Lock & Farrell, 2005; Rose, Miller & Martinez, 2009; Barrett & Turner, 2001). This type of control group can be quite informative in effectiveness research as it allows the intervention to be compared to a real-life situation. Eight studies used experimental wait-list control designs (Pahl & Barrett, 2010; Lock & Barrett, 2003; Lowry-Webster, Barrett & Dadds, 2001; Miller, Short, Garland & Clark, 2010; Miller et al., 2011b; Mostert & Loxton, 2008; Essau, Conradt, Sasagawa & Ollendick, 2012; van de Weijer-Bergsma, Langenberg, Brandsma, Oort & Bögels, 2014) which are also useful in controlling for the reactivity of initial assessment, the instillation of hope and spontaneous recovery (Barker, Pistrang & Elliot, 2002). Two studies (Anticich, Barrett, Silverman, Lacherez & Gillies, 2013; Miller et al., 2011a) used attention-control groups which are placed higher on the evidence hierarchy and can control for the nonspecific effects of intervention such as teacher attention, peer support and/or modelling of adaptive behaviours by those who are more skilled at interpersonal functioning (Barker, Pistrang & Elliot, 2002). One study used a randomised control design (Sibinga et al., 2013), with children being randomly allocated to MBSR or an active control group. Within the evidence hierarchy, this type of design is considered to be the most reliable. This was reflected in the WoE B rating for this study.

Despite the presence of a control group, four studies failed to ensure group equivalence (Mostert & Loxton, 2008; Rose, Miller & Martinez, 2009; Barrett & Turner, 2001; Lock & Barrett, 2003). This was reflected in their WoE A rating. For example, Rose, Millier and Martinez (2009) failed to report demographics of the children. The researchers also report group differences in separation anxiety at pre-test although no adjustments were made for this lack of group equivalence. Three studies (Lowry-Webster, Barrett & Dadds, 2001; Anticich, Barrett, Silverman, Lacherez & Gillies, 2013; Barrett, Lock & Farrell, 2005) used covariates to control for pre-test differences between groups whilst two studies used a multi-level regression analysis and entered the classroom as a fixed variable to account for differences (van de Weijer-Bergsma, Langenberg, Brandsma, Oort & Bögels, 2014; Miller et al., 2011b). Other studies reported participant demographics and conducted statistical analyses to ensure that groups did not differ at pre-intervention (Essau, Conradt, Sasagawa & Ollendick, 2012; Collins, Woolfson & Durkin, 2013; Miller et al., 2011a; Miller, Short, Garland & Clark, 2010; Pahl & Barrett, 2010). One study (Sibinga et al., 2013) used a randomised control design with established group equivalence.

According to Sandler (1999), the effects of prevention programmes should be monitored over time, rather than immediately after the intervention. Ten studies included in this review had a follow-up period (Collins, Woolfson & Durkin, 2013; Anticich, Barrett, Silverman, Lacherez & Gillies, 2013; Essau, Conradt, Sasagawa & Ollendick, 2012; Miller et al., 2011a; Miller et al., 2011b; Miller, Short, Garland & Clark, 2010; Pahl & Barrett, 2010; Mostert & Loxton, 2008; Lock & Barrett, 2003; Barrett, Lock & Farrell, 2005; van de Weijer-Bergsma, Langenberg, Brandsma, Oort

& Bögels, 2014). This ranged from 7 weeks to 12 months (see Appendix E). However, follow-up periods, particularly with large cohorts of children, can be marked by high attrition rates resulting from school absences, children moving schools and staff being unwilling to continue to program. Four studies (Miller et al., 2011a; Lock & Barrett, 2003; Barrett, Lock & Farrell, 2005; Collins, Woolfson & Durkin, 2013) had an attrition rate greater than 30% which was reflected in their WoE A rating.

2.4.6 Approach to analysis

Nine of the studies used ANOVAs and t-tests to assess group differences (Essau, Conradt, Sasagawa & Ollendick, 2012; Miller, Short, Garland & Clark, 2010; Mostert & Loxton, 2008; Rose, Miller & Martinez, 2009; Barrett & Turner, 2001; Lowry-Webster, Barrett & Dadds, 2001; Barrett, Lock & Farrell, 2005; Collins, Woolfson & Durkin, 2013; Lock & Barrett, 2003). Three studies used regression analyses (Sibinga et al., 2013; van de Weijer-Bergsma, Langenberg, Brandsma, Oort & Bögels, 2014; Miller et al., 2011b), one study used a factor analysis (Anticich, Barrett, Silverman, Lacherez & Gillies, 2013) and the final study used a linear growth model (Miller et al., 2011a).

Ten studies failed to control for familywise error and did not make corrections for multiple contrasts (Barrett, Lock & Farrell, 2005; Miller et al., 2011a; Miller, Short, Garland & Clark, 2010; Lowry-Webster, Barrett & Dadds, 2001; Barrett & Turner, 2001; van de Weijer-Bergsma, Langenberg, Brandsma, Oort & Bögels, 2014; Sibinga et al., 2013; Collins, Woolfson & Durkin, 2013; Anticich, Barrett, Silverman, Lacherez & Gillies, 2013; Rose, Miller & Martinez, 2009). Some have

argued that this increases the chances of a Type 1 error or the probability of incorrectly identifying outcomes as significant. However, it has also been argued that some corrections (e.g. Bonferroni) can be too conservative and actually increase the chance of a Type 2 error (Field, 2009). When considering the significance values in Table 2.6, this should be considered. All studies apart from Sibinga et al. (2013) also selected schools to serve as the unit of random assignment (i.e., randomly assigned entire schools to either treatment or control groups), but treated individual children as the unit of analysis. This is problematic as independence of observations cannot be assumed. However, it must be recognised that in school-based research, children are already nested within established class groups so on a practical level, random assignment by participant is not always possible.

In six studies, separate analyses were conducted for students identified as "high-risk" (Miller et al., 2011b; Miller, Short, Garland & Clark, 2010; Barrett & Turner, 2001; Lowry-Webster, Barrett & Dadds, 2001; Barrett, Lock & Farrell, 2005; Lock & Barrett, 2003). Whilst it is possible that these analyses are underpowered, such data can provide useful information about whether "high-risk" children can still benefit from a universal intervention. If so, universal approaches may help to overcome many of the barriers associated with individual treatment programmes such as cost and long-waiting periods (Neil & Christensen, 2009).

2.4.7 Effect size calculation

Standardised mean difference was used to represent effect sizes (ESs) – an approach which draws on change scores. According to Watson and Rees (2008), change scores increase the precision of ES calculation by controlling for pre-treatment group

differences on dependent measurements. The mean change in the control group from pre-test to post-test was subtracted from the mean change in the treatment group from pre-test to post-test. This was divided by the pooled standard deviation from pre-test (Morris, 2007). ESs were standardised so that a positive result indicates that the treatment condition performed better than the control condition.

One study (Lock & Barrett, 2003) reported insufficient data to allow separate ESs to be calculated for Grade 6 and Grade 9 children. Whilst it is recognised that there may be developmental differences between these two cohorts, the data was collapsed for the purpose of analysis. One study (Sibinga et al., 2013) reported Cohen's d values within their analysis. These values were directly extracted and can be seen in Table 2.6. All other ES were calculated by the reviewer and should be evaluated in line with Cohen's (1992) interpretation of small (0.2), medium (0.5) and large (0.8).

2.4.8 Findings

Most studies in this review yielded small-medium effect sizes, suggesting some practical significance. The majority of studies were also well-designed, with only three studies receiving low overall weight of evidence ratings (Mostert & Loxton, 2008; van de Weijer-Bergsma, Langenberg, Brandsma, Oort & Bögels, 2014; Rose, Miller & Martinez, 2009). One study in this review that is noteworthy of discussion is Sibinga et al. (2013) who found statistical significance and an effect size of d = 0.79. This is extremely promising for a mindfulness intervention. This study was also marked by strong methodology, including randomisation and an active control group which was reflected in the overall weight of evidence rating. It is possible however, that the African American boys included in this sample had a higher level of anxiety

at pre-test than other universal populations. This is supported by research showing that African-American children may be more likely to have anxiety disorders and phobias when compared to their white counterparts (Hill, Levermore, Twaite & Jones, 1996; Kashani et al., 1987). Furthermore, the small sample size may mean that the confidence interval around the effect size is wide. This could raise questions about precision and affect the strength of the conclusions being made.

A further study that warrants discussion is Collins, Woolfson and Durkin (2013). There are two main strengths of this study. Methodologically, this study included random assignment (by class), adherence to the programme manual and six month follow-up. This was reflected in the "medium" overall weight of evidence rating. There was also a teacher-led condition and a psychologist-led condition – both of which were found to be effective at reducing anxiety at post-test (d = 0.51 and d = 0.65, respectively). Importantly, these effects were also maintained at a six month follow-up (d = 0.63 and d = 0.53, respectively). This suggests that appropriately trained teachers are able to support a significant reduction in children's anxiety, which may be more sustainable in the long-term.

Four studies yielded negative ESs, indicating that the control group outperformed the experimental group (Miller, Short, Garland & Clark, 2010; Sibinga et al., 2013; Lock & Barrett, 2003, Lowry-Webster, Barrett & Dadds, 1997). In one study (Miller, Short, Garland & Clark, 2010) this negative ES demonstrated that teacher attention was more effective at reducing anxiety than the FRIENDS for Life programme. However, this failed to reach statistical significance. At a basic level, it is possible that attention is therapeutic and able to change behaviour (Deni, 2001). It is also

possible that repeated completion of the anxiety questionnaires may have triggered help-seeking behaviour by some young people in the control group (Spence & Shortt, 2007). It is vital that future studies collect data regarding changes in school practices, additional programmes and help-seeking activities to ensure that the result is not explained by other therapeutic influences. For Sibinga et al. (2013), a negative effect size of d = -0.30 may be explained by the fact that the anxiety sub-domain of the Symptom Checklist-90R was used. This sub-domain has ten items, meaning that any large fluctuations in the data may have skewed the results. However, these null results are not promising or in support of universal cognitive-behavioural programmes.

Ten studies looked at follow-up effects (see Table 2.6). For most of these studies, effect sizes increased from post-test to follow-up. There are two possible explanations for this. Firstly, it is possible that the follow-up period allowed children to internalise the skills that they had been taught and practice the new techniques. In support, research suggests that the amount of time spent practising is significantly related to outcome (Carmody & Baer, 2008). Alternatively, it is possible that high attrition rates (of either children or entire classes) meant that only children/teachers with higher levels of motivation continued to participate. This restricts the degree to which the final sample is representative. Whilst neither of these explanations can be verified, they are useful to consider when interpreting the results.

Overall, it can be argued that universal programmes are somewhat effective in reducing symptoms of anxiety in children. An additional benefit of universal designs is that children with high levels of anxiety at pre-test ("at-risk" group) can be

targeted without the need for labelling and stigmatisation. In six studies, separate analyses were conducted for students identified as "at-risk" (Miller et al., 2011b; Miller, Short, Garland & Clark, 2010; Barrett & Turner, 2001; Lowry-Webster, Barrett & Dadds, 2001; Barrett, Lock & Farrell, 2005; Lock & Barrett, 2003). To demonstrate change, four studies presented the number and percentage of children "at-risk" (e.g. SCAS score of 42.48 or above) for each time interval. Using this approach, three studies found that the percentage of children "at-risk" decreased following the intervention (Lowry-Webster, Barrett & Dadds, 2001; Barrett, Lock & Farrell, 2005; Barrett & Turner, 2001). The fourth study (Lock & Barrett, 2003) found no difference in risk status between children in the intervention and control groups. For Miller et al. (2011b), it was found that children with elevated scores at pre-test showed a significant decrease in anxiety symptomology over time. However, these "at-risk" children were not compared to an "at-risk" group within the control. This makes interpretation of the results difficult. In all six studies, only Miller, Short, Garland and Clark (2010) reported the raw data (including participant numbers) for the "at-risk" group, allowing an effect size to be calculated. This calculation revealed an effect size of $d = 0.75$, suggesting that the cognitive-behavioural intervention was extremely effective for the children with high levels of anxiety at pre-test. It should be noted that this magnitude of effect is comparable to indicated studies that have implemented the intervention solely with high-risk children (Dadds, Spence, Holland, Barrett & Laurens, 1997).

Table 2.6

Summary of Effect Sizes for Anxiety Reduction in Universal Populations

Author	***Intervention Type***	**N**	**Measure**	**Effect Sizes**				**Overall WoE rating**
				Post-test	**Interpretation**	**Follow-up**	**Interpretation**	
Collins, Woolfson & Durkin (2013) Psychologist-Led	Lessons For Living: Think well, do well	N = 317	SCAS	*d* = 0.65***	Medium	d = 0.53***	Medium	Medium
Collins, Woolfson & Durkin (2013) Teacher-Led	Lessons For Living: Think well, do well	N = 317	SCAS	*d* = 0.51***	Medium	d = 0.63***	Medium	Medium
Essau, Conradt, Sasagawa and Ollendick (2012)	FRIENDS for Life	N = 638	SCAS	*d* = 0.07	<Small	d = 0.37 (6) d = 0.58** (12)	Small (6) Medium (12)	Medium
Mostert and Loxton (2008)	FRIENDS for Life	N = 46	SCAS	*d* = 0.17	<Small	d = 0.54*** (4) d = 0.28*** (6)	Medium (4) Small (6)	Low
Lock and Barrett (2003)	FRIENDS for Life	N = 1134	SCAS RCMAS	*d* = 0.10* *d* = 0.08*	<Small <Small	d = 0.005* d = -0.03*	<Small <Small	Medium
Miller et al., (2011a)	FRIENDS for Life	N = 253	MASC	*d* = 0.19	<Small	d = 0.17	<Small	Medium
Miller et al., (2011b)	FRIENDS for Life	N = 533	MASC	*d* = 0.01	<Small	d = 0.07	<Small	Medium
van de Weijer-Bergsma et al. (2014)	MindfulKids	N = 208	SCARED	*d* = 0.18	<Small	d = 0.36***	Medium	Low

Sibinga et al., (2013)	MBSR	N = 43	MASC SCL-90R	*d* = 0.79** *d* = -0.30	Medium <Small	- -	- -	High
Barrett and Turner (2001) Psychologist-Led	FRIENDS for Life	N = 489	SCAS RCMAS	*d* = 0.24* *d* = 0.31*	Small Small	- -	- -	Medium
Barrett and Turner (2001) Teacher-Led	FRIENDS for Life	N = 489	SCAS RCMAS	*d* = 0.24* *d* = 0.19*	Small <Small	- -	- -	Medium
Lowry-Webster, Barrett and Dadds (2001)	FRIENDS for Life	N = 594	SCAS RCMAS	*d* = 0.37* *d* = -0.09	Medium <Small	- -	- -	Medium
Rose, Miller & Martinez (2009)	FRIENDS for Life	N = 52	MASC	*d* = 0.35	Medium	-	-	Low
Miller, Short, Garland and Clark (2010)	Taming Worry Dragons	N = 116	MASC	*d* = -0.05	<Small	-	-	Medium
Pahl and Barrett (2010)	Fun FRIENDS	N = 263	PAS	*d* = 0.14	<Small	-	-	Medium
Anticich et al. (2013)	FUN Friends	N = 488	PAS	Insufficient data***	-	Insufficient data***	-	Medium
Barrett, Lock and Farrell (2005)	FRIENDS for Life	N = 692	SCAS	Insufficient data	-	Insufficient data*	-	Medium

SCAS = Spence Children's Anxiety Scale, RCMAS = R*evised Children's Manifest Anxiety Scale, SCARED* = Screen for Child *Anxiety* Related Disorders, SCL-90R = The Symptom Checklist-90-Revised, PAS = *Preschool Anxiety Scale*

*= Statistical analyses significant to p<.05, **= Statistical analyses significant to p<.01, *** = Statistical analyses significant to p <.001

2.5 Conclusion

2.5.1 Overview of findings

The prevention of anxiety in children and adolescents presents an important challenge for researchers, teachers and psychologists. In this review, the effectiveness of universal cognitive-behavioural programmes for reducing anxiety was assessed. At post-test, seven studies found significant results with effect sizes (Cohen's *d*) ranging from -0.30 to 0.79. Nine studies also found significant results at follow-up with effect sizes being maintained over time. This evidence suggests that universal cognitive-behavioural programmes are a promising intervention for reducing anxiety among children and adolescents. This is particularly pertinent given that universal programmes also reach "large numbers of individuals including those most vulnerable" (Rice, Rawal, Riglin, Lewis, Lewis & Dunsmuir, 2015, p. 321).

2.5.2 Implications for Theory

The conclusions of this review are helpful in terms of thinking about effective programmes for reducing anxiety in children and adolescents. The next step would be to consider the mechanisms through which this effect occurs. In other words, cognitive-behavioural programmes appear to work, but *how*? A review of the literature suggests that there are three main commonalities among cognitive-behavioural programmes: psychoeducation (Donker, Griffiths, Cuijpers & Christensen, 2009), desensitisation (Hudson, 2005; Segal, Williams & Teasdale, 2002) and distancing (Shapiro, Carlson, Astin and Freedman, 2006; Linehan, 1993).

According to Chu and Harrrison (2007), anxious individuals often use avoidance as a way to manage emotional distress and fear. In traditional CBT, gradual exposure to the feared stimuli is thought to alter the child's thoughts regarding the perceived threat (Hudson, 2005). This mechanism of "desensitisation" is similar to mindfulness. Through mindfully attending to negative emotional states, one learns experientially that such emotions need not be feared or avoided and that they eventually pass away (Segal, Williams, & Teasdale, 2002). Another explanation is psychoeducation, which is a common feature of all cognitive-behavioural programmes. In adult samples, there is evidence to suggest that brief passive psychoeducational interventions are effective in reducing anxiety symptoms (Donker, Griffiths, Cuijpers & Christensen, 2009). It would be helpful to boost this component of cognitive-behavioural programmes for children and adolescents to explore whether this has an enhancing effect. Finally, Shapiro, Carlson, Astin and Freedman (2006) argue that "repercieving" is a key mechanism of change in mindfulness. This concept of "repercieving" is similar to the technique of "distancing" in traditional CBT, where an individual is encouraged to recognize that distressing thoughts are not always accurate representations of reality (Linehan, 1993). Understanding the mechanisms of change appears to be a complex issue. This is compounded by the fact that additional mechanisms of change are implicated in mindfulness.

Mindfulness practice is characterised by 'paying attention in a particular way: on purpose, in the present moment, and non-judgementally' (Kabat-Zinn, 1994, p.4). These qualities of "paying attention" may be an important mechanism of change. For example, adopting present moment awareness offers individuals with a "mental

space", where their attentional focus is less susceptible to being hijacked by a train of inaccurate and distress-provoking cognitions (Greeson & Brantley, 2009). The non-judgemental feature of "paying attention" may also act as a mechanism of change as even unpleasant thoughts and feelings are openly accepted with the notion that they are transient (Huffziger & Kuehner, 2009). Clearly, understanding the mechanisms through which cognitive-behavioural programmes are effective is complex and an area that warrants further investigation.

2.5.3 Recommendations for further research

Overall, the quality of the studies included in this review was high. However, the unit of analysis (i.e. the individual child) did not match the unit of randomisation (i.e. schools or classes) in many studies. Given that independence of observations cannot be assumed within a classroom or school, this analytic approach is questionable (Briesch, Hagermoser Sanetti & Briesch, 2010). Furthermore, several studies failed to make fidelity checks, had insufficient sample sizes and did not collect follow-up data. Whilst there are many inherent difficulties associated with delivering universal interventions (e.g. regression to the mean, high attrition rates, poor response rates), the above issues are all amenable to change.

To improve outcomes, future research could also place a greater emphasis on engaging parents/carers and encouraging home practice. This is because research shows that both factors can improve therapeutic outcome (Kazantzis, Deane & Ronan, 2000; Carmody & Baer, 2008). As described above, exploring mechanisms of change would also be a valuable addition to the field. This could be achieved through quantitative or qualitative methods. Using a quantitative design, one could

enhance the components of the intervention that are related to the mechanism of change. Comparing the results to the original programme might provide further insight into how the effect occurs (Kraemer, Wilson, Faiburn, Agras, 2002). Alternatively, this could be explored using qualitative methods and specific questions about *how* cognitive-behavioural approaches have helped.

There has been some debate within the literature regarding programme implementers and more specifically, *who* is best placed to deliver mental health interventions in schools. Stallard et al. (2014) found that health professionals were more effective in delivering the FRIENDS for Life intervention when compared to teachers. One explanation for this is that health professionals have a better understanding of the theoretical and psychological underpinnings of mental health programmes and are therefore better placed for programme delivery. Others have argued that training teachers in cognitive-behavioural programmes could have additional, long-term benefits (Collins, Woolfson & Durkin, 2013). This is because teachers (compared to other professionals) remain aware of the stressors in children's lives and are therefore in a better position to support children, on a daily basis, in applying effective cognitive-behavioural techniques. This type of coaching may help to consolidate children's learning and contribute towards follow-up results. This area clearly warrants further research and exploration.

In this review, mindfulness was included within the family of cognitive-behavioural interventions. This decision was based on research suggesting that 'third wave' treatments are fundamentally related to traditional CBT and share a number of therapeutic principles. In adult populations, mindfulness has also been found to be

comparable in effectiveness to traditional CBT (Hoffman, Sawyer & Fang, 2010). In this review, it is very promising to note that the mindfulness interventions were also as effective as traditional CBT approaches. In fact, the largest effect size and strongest methodological quality rating was awarded to a mindfulness intervention. For an emergent field, this is extremely striking. It is of great interest as to whether mindfulness is an effective anxiety prevention programme in UK schools – something that most certainly warrants further investigation.

2.5.4 Strengths and Limitations of the Systematic Literature Review

One of the strengths of this systematic literature review is that a range of databases were used to locate articles that were relevant to the research question (i.e. PsycINFO, Medline and ERIC). The search terms (see Table 2.1) were also carefully considered at the start of the review process. This is important given that many databases are "highly structured" and have "complex indexing rules" meaning that without careful consideration, relevant references may be missed (Dickersin, Scherer & Lefebvre, 1994, p.1289). To further avoid this potential pitfall, the reference lists of retrieved articles were also checked. Clearly, this systematic approach is important given that the conclusions of a literature review are dependent on the accuracy of the approach used to identify relevant research (Dickersin, Scherer & Lefebvre, 1994).

It is often argued that another way to maximise the identification of relevant articles is to employ a reviewing team. This is because the risk of incorrectly discarding relevant research articles is greatly reduced when two members of the team independently screen the databases and review relevant articles to see whether they meet the inclusion/exclusion criteria (Edwards et al., 2002). Other authors advocate speaking to experts in the field, as they may be aware of relevant articles that have

been missed or need further consideration (Pogue & Yusuf, 1998). This is a particularly pertinent suggestion given that external examination of this review led to a discussion about a particular research article, published by Stallard et al. (2014), that was not included in the review. Interestingly, this research article was also not listed as a study that had been excluded based on full text analysis (see appendix A).

Whilst it was possible that this article may have been missed, a re-examination of the search history highlighted that the reviewer had excluded this research article based on the content of the abstract. The inclusion/exclusion criteria (outlined in Table 2.2) states that a research article is to be excluded unless it collected data on overall anxiety levels (as opposed to collecting data about specific sub-scales of anxiety or other areas of mental health). As noted in the abstract, Stallard et al. (2014) used the Revised Children's Anxiety and Depression Scale (RCADS) to measure change over time. The researcher was aware that this scale collects data on various sub-scales of anxiety (e.g. social phobia, panic disorder) as well as depression. It also provides a total RCADS score, which is referenced throughout the abstract. To ensure that an overall anxiety score was not computed and described within the text, full text analysis has since been undertaken. This showed that the research article was correctly excluded as it did not meet the criteria required for the review question.There are several implications of using strict inclusion criteria. Some have argued of its importance, stating that strict inclusion criteria help to reduce the heterogeneity among the selected studies. This can make it easier to compare and contrast the studies and make conclusions about effectiveness (Buyse, 1989). It has also been argued that strict inclusion criteria can help reviewers to navigate the vast amount of published research, leading to a clear and coherent summary of research in one specific area (Ross, 2012).The caveat of this is that the complexities of the

research base can be missed and conclusions made without a full exploration of the literature. Clearly, researchers need to be aware of these strengths and limitations and use them to make appropriate conclusions about the findings of systematic literature review.

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Chapter 3: Mindfulness in Schools: Exploring the impact on internalising difficulties, the role of home practice and the mechanisms of psychological change

3.1 Abstract

Anxiety is the most common form of psychopathology in childhood and adolescence. There is growing evidence that mindfulness-based approaches may be effective in reducing anxiety among children. This study used a mixed methods design to explore the possible benefits of the Mindful Attention Programme (MAP), which is yet to be evaluated. One hundred and sixty-two children aged 9-10 years completed measures of anxiety, negative automatic thoughts and mindfulness before and after the programme. The results showed that the MAP had a non-significant effect on anxiety (p = 0.052) and negative thoughts (p = 0.055). The MAP had a significant effect on mindfulness scores, which increased over time (p = 0.02). There was no relationship between home practice (i.e. reported completion of meditations at home) and outcomes which contradicts previous findings. The second phase of the research included two parts: an open-ended questionnaire and focus groups. The questionnaire revealed that there were a number of barriers to practising at home but also enabled the children to make recommendations about how to make home practice easier. Three focus groups were facilitated and analysed using thematic analysis. Three main themes were identified (reported change, mechanisms of change and home practice). The implications for the knowledge base, practice and future research are discussed.

3.2 Introduction

3.2.1 Professional rationale for study

Anxiety disorders are among the most common psychiatric disorders in school-aged children and adolescents, with international prevalence rates averaging between 4%

and 25% (Neil & Christensen, 2009). Unfortunately however, the number of children receiving mental health services in the UK is low (Stallard, 2010) whilst waiting lists are long (Kurtz, 2004). If left untreated, childhood mental health difficulties can impact on intrinsic motivation, concentration and school adjustment (McGee & Stanton, 1990; Ma, 1999; Rodgers & Dunsmuir, 2013). Untreated mental health difficulties can also have a number of long-term consequences such lower educational achievement, an increased likelihood of 'not being in education, employment or training' (NEET), poorer physical health and increased likelihood of criminal conviction (Goodman, Joyce & Smith, 2011; Centre for Mental Health, 2010). Clearly, the economic case for addressing child and adolescent well-being is a strong one.

In light of these findings, the British Government have been keen to put mental health and well-being on the *school* agenda. One such project was The Targeted Mental Health in Schools (TaMHS) programme which ran between 2008 and 2011. This aimed to transform the way that mental health services were delivered and to support schools in delivering evidence-based interventions to children requiring support. Whilst evaluations suggested that this initiative had some positive effects on the internalising and externalising behaviour of some primary school children (Department for Education, 2010), concern remained about the number of children and young people with mental health difficulties. The Department for Education (2010, p.104) also concluded that schools needed to use "more manualised approaches with a clear evidence base as these have been found in the literature to have the greatest impact". Under the current Government, there has been a continued emphasis on promoting the mental health and well-being of children people through

improving access to effective support. The Children and Young People's Mental Health Taskforce (2015, p.36) also report that the Government aims to "prevent mental health problems from arising and provide early support where they do".

At present, Cognitive Behavioural Therapy (CBT) is the most commonly used psychosocial intervention for anxiety among adults and the most empirically supported therapeutic approach for children and adolescents (The Australian Psychological Society, 2010). However, this may be a consequence of insufficient evidence for alternative interventions, rather than research showing that other treatments are ineffective or unsuitable. This thesis will therefore explore an alternative approach to supporting anxiety in children – mindfulness.

3.2.2 Current Research in Mindfulness

Mindfulness-based approaches for adults were originally developed within the medical community. In 1982, Jon Kabat-Zinn developed Mindfulness Based Stress Reduction (MBSR) to support individuals with chronic pain and stress. This group-based intervention helps individuals to become more aware of their thoughts, feelings and body sensations as they arise on a moment-by-moment basis (Kabat-Zinn, 1994). Through meditation, individuals are taught to attend to their internal and external processes with an attitude of non-reactivity and acceptance. Furthermore, individuals are taught to view these processes objectively rather than as reflections of truth or reality. This, in turn, provides individuals with a "mental space" where they can respond to difficult emotions more productively (Greenberg & Harris, 2012). Since the birth of MBSR, a number of additional mindfulness-based approaches have been developed. This includes Mindfulness-Based Cognitive Therapy (MBCT;

Segal, Williams and Teasdale, 2002) which is a group-based intervention designed to reduce relapse or recurrence of depression. After growing evidence that this approach was effective (Teasdale, Segal, Williams, Ridgeway, Soulsby & Lau, 2000; Williams & Swales, 2004; Kenny & Williams, 2007), MBCT was recommended by the National Institute for Health and Clinical Excellence (NICE) as a form of relapse prevention for adults who have experienced three or more previous episodes of depression. Recent research has also shown that MBCT can be "as effective" as antidepressant medication in preventing relapse, which provides adults with greater choice about treatment options (Kuyken et al. 2015). As can be seen above, the evidence base for mindfulness practice with adults is now fairly robust and well-established (Greeson, 2009).

Over the last decade, interest in the application of mindfulness to children and young people has increased. A number of mindfulness programmes now exist including MindUp (Lawlor & Willis, 2009), Learning to BREATHE (L2B; Broderick, 2013) and .b (Mindfulness in Schools Project). Whilst these programmes typically reflect the shorter attention span of children and young people by including games, movement and practical tasks (Semple, Lee & Miller, 2006), they all teach children to become aware of their thoughts, feelings and body sensations. Rather than getting "stuck" on these events, children are taught to notice them and let them pass. This is often explained to children as "watching clouds float across the sky" (Greco & Hayes, 2008) which highlights the transient nature of internal experiences. With children and young people, there is growing evidence to suggest that mindfulness-based approaches are able to improve attention (Semple, Lee, Dinelia & Miller, 2010), reduce substance misuse (Bootzin and Stevens, 2005), improve executive

functioning (Flook et al., 2010) and increase emotional regulation (Broderick & Metz, 2009). There is one area however, that has received less attention within the literature – anxiety.

3.2.3 Mindfulness and Anxiety

There is a good rationale for mindfulness being an effective intervention for anxiety. According to Kabat-Zinn (1994), sustained, non-judgmental observation of anxiety-related sensations, without attempts to escape or avoid them, can lead to reductions in emotional reactivity. By adopting a present moment awareness (Kabat-Zinn, 2003), individuals are also afforded a 'mental space', where their attention is less likely to be hijacked by inaccurate and distress provoking cognitions (Greeson & Brantley, 2009). In support, research has shown that more mindful individuals have a lower frequency of depressive, worry and social fear related cognitions (Frewen, Evans, Maraj, Dozois & Partridge, 2008).

The research into mindfulness and anxiety for children is still in its preliminary stages, although initial research is promising. Biegal, Brown, Shapiro and Schubert (2009) found that an 8-week MBSR course was effective in reducing symptoms of anxiety among adolescents under psychiatric care (d = 0.70 for state anxiety and d = 0.79 for trait anxiety). In a school context, Sibinga et al. (2013) found that mindfulness was effective in reducing anxiety levels (d = 0.79) and rumination (d = 0.64) for African American boys from low socio-economic status families. In a universal population of 8-12 year olds, Van de Weijer-Bergsma Langenberg, Brandsma, Oort & Bögels, (2012) also found similar effects of mindfulness on anxiety, but with a smaller effect size (d = 0.18). However, parent-report was the

only source of data for anxiety in this study. With research consistently indicating an inconsistent agreement between parent and child reports (Kendall & Flannery-Schroeder, 1998), one could argue that children may have viewed the degree of change differently.

3.2.4 Mode of Delivery

Within the mindfulness literature, a number of different modes of delivery exist. According to Lowry-Webster, Barrett and Dadds (2001), intervention programmes can take three forms; selective, indicated and universal. In indicated interventions, children are screened and treatment is provided to those who have detectable symptoms of mental disorders but may not yet meet diagnostic criteria. In selective interventions, individuals who present with a greater risk of developing a mental disorder (based on biological or social risk factors) are targeted. In universal interventions, treatment is provided to all children, regardless of their risk status. This approach is able to reach a broad range of children, ranging from those at-risk to those with sub-clinical symptoms. There is an on-going debate with the literature around whether universal programmes are an effective mode of delivery. Some argue that universal programmes can reduce stigmatisation, enhance peer support and increase the opportunity for social learning, prompting and rewarding by the peer group (Amburster, Andrews, Couenhoven, & Blau, 1999; Evans, 1999). Others argue that "universal programmes may not be sufficiently focused on the specific problems of individual students to help those who are more symptomatic" (Stallard et al., 2012, p.5). Interestingly, Neil and Christensen (2009) found that universal programmes targeting anxiety show a higher proportion of significant trials and larger effect sizes, compared to indicated and selective programs. This research will

therefore use a universal design to explore the impact of mindfulness on children aged 9-10 years. The next sub-section will provide a rationale for the selection of this age group.

3.2.5 Relevance of Age

There is growing evidence to suggest that anxiety disorders develop in childhood. The earliest age of onset has been found for separation anxiety disorder and specific phobias, which typically emerge before the age of 11 years (Kessler, Berglund, Demler, Jin, Merikangas & Walters 2005; Becker et al. 2007). There is evidence to suggest that social phobia develops in late childhood and early adolescence (Wittchen & Fehm, 2003). Whilst panic disorder may begin as early as 12 years old (Wittchen et al. 2008), the typical onset is late adolescence which is the same for agoraphobia and generalised anxiety disorder (Kessler, Berglund, Demler, Jin, Merikangas & Walters 2005). Clearly, there is a need for early intervention as well as preventative programmes which teach children ways to cope with difficult emotions even before they arise. In this study, children aged 9-10 years will be selected to take part. Given that the earliest age of onset is 11 years of age, this age group was thought to be most appropriate. Furthermore, it was not feasible to select children aged 10-11 years as this is the year that many children sit their Standard Assessment Tests (SATs) – an anxiety provoking time which could have further compounded the results of the intervention.

3.2.6 Unique Contribution of this Research

This piece of research makes a unique contribution to the field for a number of reasons. Firstly, a mixed methods design will be used to explore children's perception of change, along with more standardised measures. This is the first-known piece of research to take this mixed-methods approach when exploring mindfulness in typically-developing children within the UK context. The research will also attempt to fill three current gaps in the mindfulness literature and explore: (a) the impact of mindfulness on negative automatic thoughts, (b) the relationship between home practice and therapeutic outcome and (c) the mechanisms of change i.e. how does mindfulness work? A rationale for each of these is described below.

There is a body of evidence suggesting that negative automatic thoughts (NATs) play a crucial role in the pathogenesis of anxiety disorders (Beck & Clark, 1997). As a result, one might expect any changes in levels of anxiety to be underpinned by a similar change in NATs. However, empirical research has not yet examined the relationship between mindfulness and NATs in children. The rationale for NATs decreasing over the course of a mindfulness intervention is that mindfulness 'promotes a form of awareness of negative thoughts in which qualities of acceptance, de-centering, and letting-go cultivate one's inner capacity to reflect upon and influence one's own cognitive experiences' (p.759, Frewen et al., 2008). As the content of thoughts are not challenged or changed directly, this is described as 'second order change'. This study will aim to measure this change empirically.

Home practice is considered an integral part of many intervention programmes, including CBT (Kazantzis, Deane & Ronan, 2000) and mindfulness (Kabat-Zinn,

1994). Using mindfulness in adults populations, Carmody and Baer (2008) found that the time spent engaging in home practice was significantly related to outcome. However, there have been few attempts to gather information about home practice from children. After a 4-week mindfulness intervention, Huppert and Johnson (2010) asked children to report on the frequency of their home practice. However, this retrospective measurement technique can be heavily criticized on the basis of reliability. This study will therefore collect data on home practice *during* the intervention, in order to establish whether this has an enhancing effect on outcomes. In the qualitative strand of the research, children will also be asked about any benefits and difficulties that they experienced with home practice.

Finally, there is growing evidence that mindfulness is an effective intervention option. However, there is still a very limited understanding of the mechanisms through which this effect occurs. There is initial evidence that mindfulness appears to work, but *how*? When supporting children and young people, it is essential to have an understanding of the processes or events that are responsible for change. This is because it can help to optimise therapeutic change in the future, by ensuring a focus on the strategies that trigger the critical change processes (Kazdin, 2007).

3.2.7 Research questions (RQs)

Quantitative research questions:

- RQ1: What is the impact of mindfulness training on the overall anxiety levels (as measured by the Spence Children's Anxiety Scale) of children aged 9-10 years?

- RQ2: What is the impact of mindfulness training on the negative automatic thoughts (as measured by the Children's Automatic Thoughts Scale) of children aged 9-10 years?
- RQ3: Are there improvements in mindfulness awareness (as measured by the Mindful Attention and Awareness Scale for Children) over the course of the intervention?
- RQ4: Is a reduction in anxiety over time (as measured by the Spence Children's Anxiety Scale) related to the amount of home practice between sessions?
- RQ5: What is the impact of mindfulness training on the "risk status" of children aged 9-10 years?

Qualitative research questions:

- RQ6: What is the impact of mindfulness on thoughts and feelings, from the children's perspective?
- RQ7: How does mindfulness improve well-being i.e. what are the mechanisms of change?
- RQ8: What do children perceive to be the challenges of home practice and how could these be overcome?

3.3 Method

3.3.1 Design

An explanatory sequential mixed-methods design was used to answer the research questions (Creswell, Plano Clark, Gutmann & Hanson, 2003). This two-phase approach starts with the collection and analysis of the quantitative data. This is followed-up by a qualitative strand which has the purpose of further exploring and/or explaining the initial findings (see Figure 3.1).

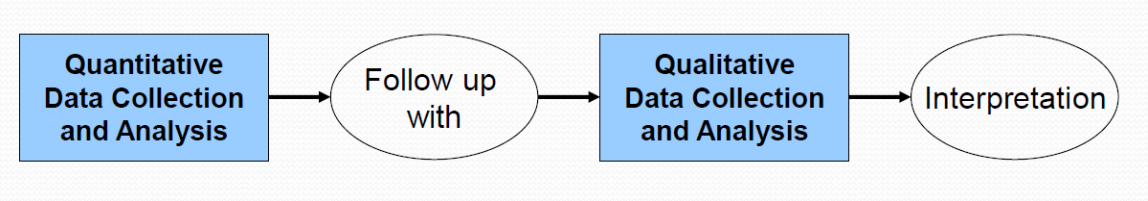


Figure 3.1: Explanatory sequential mixed-methods design

To answer research questions 1-5, a quasi-experimental wait-list design was used. This design allows a researcher to examine the effectiveness of an intervention, relative to treatment as normal. As shown in Figure 3.2, all children completed a number of questionnaires at the start of the research. The experimental group then received an 8-week mindfulness intervention whilst the comparison group received treatment as normal (i.e. they attend PSHE lessons). At the end of the 8-week intervention, all children completed the same measures so that change could be documented. Finally, the wait-list comparison group received the mindfulness intervention. According to Barker, Pistrang and Elliot (2002), quasi-experimental designs are also useful in controlling for the reactivity of initial assessment, the instillation of hope and spontaneous recovery. One major flaw of this design is the

lack of random assignment. In this study, children were already nested within established class groups which meant that random assignment by individual was not possible. However, a lack of random assignment may create threats to internal validity, as the differences between groups may reflect group characteristics and contexts rather than the effects of intervention (Mertens, 2010).

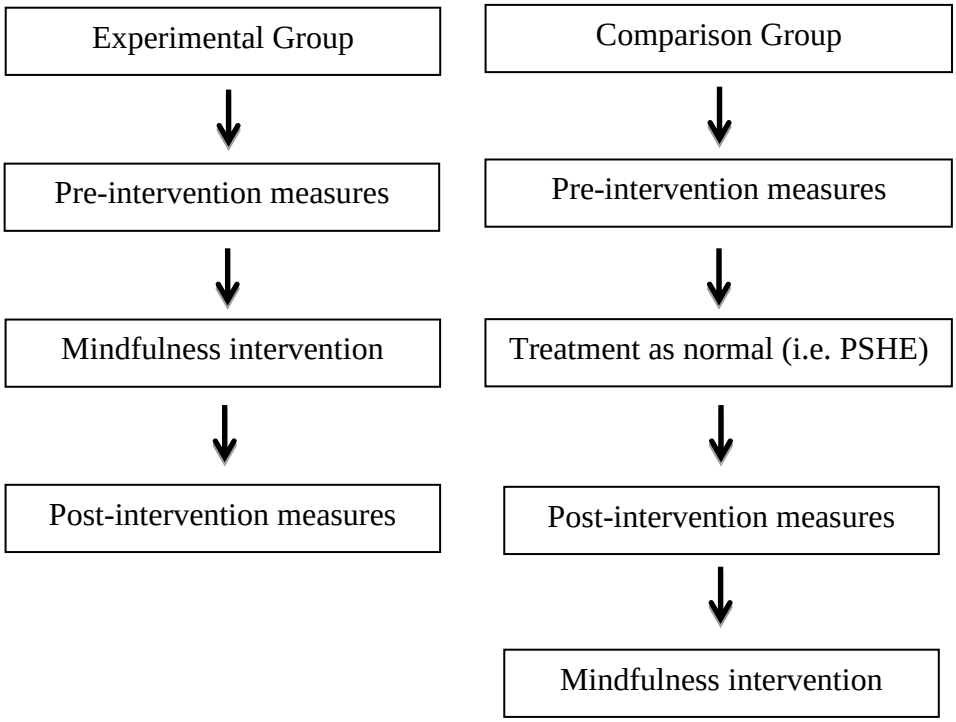


Figure 3.2. Diagrammatical representation of the quasi-experimental research design

The qualitative strand had two parts: a questionnaire containing two open-ended questions and focus groups. The rationale for using a qualitative strand, and therefore a mixed-method design, was threefold. Firstly, it has been argued that quantitative measures are reductionist i.e. they "reduce" complex phenomena such as human behaviour to numbers (Baum, 1995; Clark-Carter, 2004). In order to fully capture reported change in thoughts and feelings, alternative methods are required. The

second reason for selecting a mixed-methods design was to address the research question relating to the mechanisms of change. In other words, how does mindfulness work, under what circumstances, and for whom? It was felt that this could not be explored using exclusively quantitative methods. Finally, the research aimed to explore the impact of home practice on child outcomes - an area of mindfulness that has been neglected in previous studies. The views of children gathered using qualitative methods would enable exploration of this issue as well as providing information about the challenges of practising at home and ways to make home practice easier to complete.

3.3.2 Participants

3.3.2.1 Mindfulness Intervention

Power calculations based on a Cohen's *d* effect size of 0.48 indicated that with an alpha level of 0.05, a sample size of 70 per group would result in a power level of 80%. To account for possible attrition and pupil absence, three classes were recruited per group (approximately 90 children).

Schools were recruited in: (a) the local authority in which the researcher worked as a Trainee Educational Psychologist (TEP) and (b) local authorities in which the author of the Mindful Attention Programme (MAP) worked as a Locum Educational Psychologist. Schools that were known, through discussions with their EPs, to have a pre-existing interest in mindfulness were invited to take part. They were informed about the nature of the research project through a leaflet (see appendix F) and encouraged to contact the lead researcher if they had any questions. Five schools volunteered to take part in the research project. To ensure that the schools were

matched as closely as possible on demographic variables, the Ofsted Data Dashboard was used **(**http://dashboard.ofsted.gov.uk/**)** to compare schools. The schools were compared on the percentage of children with Free School Meals (FSMs) and English as an Additional Language (EAL). Based on these variables, a total of three schools were selected to take part in the research project: school A (3-form entry school) and school B and C (2-form entry and 1-form entry schools, respectively).

A total of 162 children consented to take part in the research project (82 in the experimental group and 80 in the comparison group). The number of parents that did not consent for their child to take part was low (n = 2 in the experimental and comparison groups, respectively). Participants in the experimental group all attended one primary school in North London. This school was a 3-form entry school meaning that the children were in 3 separate classes. The following numbers of participants were in each class: 30, 27 and 25. Participants in the comparison group came from 2 separate schools in South East London. The first school was a 2-form entry school meaning that the children were in 2 separate classes. There were 28 and 25 children in each class, respectively. The second school was a single-form entry and had a total of 27 children in the class. The demographic data of the participants in presented in Table 3.1.

Table 3.1

Summary of demographic variables for experimental and comparison groups

Demographic data	Condition	
	Experimental Group (*n* = 82)	**Comparison Group (*n* = 80)**
Gender		
Male	44%	44%
Female	56%	56%
Ethnicity		
White- European/Irish/Other	16%	71%
Black- African, Caribbean, Other	8%	4%
Asian- Pakistani, Bangladeshi, Other	69%	15%
Mixed Race	1%	10%
Other	6%	-
Primary Language		
English	46%	62%
Other	54%	38%

3.3.2.2 Follow-Up Questionnaire

For the follow-up questionnaire, all participants in the experimental group took part.

3.3.2.3 Focus Groups

Purposive sampling was used (Miles & Huberman, 1984) to identify focus group participants. This involved choosing specific children to participate, based on criteria that were relevant to the research questions. For this part of the study, children who had shown the largest change in anxiety score (as measured by the Spence Children's Anxiety Scale) from pre-test to post-test were selected. This was based on the idea that these children may be better placed to articulate the mechanisms of change. In general, researchers recommend an optimal group size of four-five children (Morgan, Gibbs, Maxwell & Britten, 2008; Hoppe, Wells, Morrison, Gillmore & Wilsdon, 1995). This number of children is considered large enough for the benefits of

synergism (more data is elicited through the nature of group interaction) and snowballing (one participants comment triggers another's) leading to a diverse range of opinions (Kitzinger, 1995). A group size smaller than this number can begin to resemble individual interviews and increase the likelihood of children responding with comments that they believe the researcher wants to hear (Donaldson, 1978) whilst larger groups may be more difficult to manage (Hoppe, Wells, Morrison, Gillmore & Wilsdon, 1995). To account for possible absence on the day, six children were selected from each class to take part in a focus group. The final number of children in the three focus groups was four, five and six, respectively. The demographics of the children are included in Table 3.2.

Table 3.2

Summary of demographic variables for focus group children

Demographic data	**Focus Group**		
	Focus Group 1 (*n* = 4)	**Focus Group 2 (*n* = 5)**	**Focus Group 3 (*n* = 6)**
Gender			
Male	3	-	1
Female	1	5	4
Ethnicity			
White- European/Irish/Other	1	-	-
Black- African, Caribbean, Other	1	-	1
Asian- Pakistani, Bangladeshi, Other	2	5	5
Primary Language			
English	3	-	3
Other	1	5	3

3.3.3 Data Collection Techniques

3.3.3.1 Self-Report Measures

In order to answer RQs 1- 4, three measures were administered to the whole-class at pre and post intervention. For each measure, questions were read aloud by the researcher on an item-by-item basis. After each question, children were given approximately 10 seconds to record their answer. To support engagement and concentration, the children were asked to complete the questionnaires in silence. Prior to the administration of the questionnaires, discussions with class teachers revealed that some children might find it difficult to understand the questions and/or respond appropriately using the Likert-scale. As a result, teachers and teaching assistants were made available to work with specific children and/or answer any questions. It took approximately 45 minutes to complete all 3 questionnaires. The three questionnaires used in this research are outlined below.

Anxiety. To ascertain children's anxiety levels, the Spence Children's Anxiety Scale (SCAS; Spence, 1998) was used. This is a self-report measure with 44 items that are rated on a three-point Likert scale ranging from 0 'Never' to 3 'Always'. Example questions include "When I have a problem, my heart beats really fast". There are six positive filler items, which are also rated on a three-point Likert scale, that are not included in the total score. As a result, a total score can range from 0-114. In previous research, the SCAS has demonstrated high internal consistency ($\alpha = .92$), adequate test-retest reliability ($r = .6$) and high split half reliability ($r = .90$), as well as good convergent and divergent reliability (Spence, Barrett & Turner, 2003). In the

current study, the SCAS showed high internal consistency (α = .94) at both pre-test and post-test.

Negative automatic thoughts. To explore children's negative automatic thoughts, the Children's Automatic Thoughts Questionnaire (CATS; Schniering & Rapee, 2002) was used. It should be noted that only the internalising sub-scales (social threat and personal failure) were used. This decision was made based on research showing that anxiety disorders are caused and maintained by a disturbance in information processing that leads to an overestimation of danger or perceived threat and an underestimation of personal ability to cope (Beck, Emery, & Greenberg, 1985). These sub-scales alone have been shown to have a high internal consistency (α = 0.95) and adequate (r = .6) test-retest reliability (Sheffield et al., 2006). This self-report measure has 20 items that are rated on a four-point Likert scale, ranging from 0 'Not at all' to 4 'All the time'. Examples questions include "Over the past week I thought, I'll never be as good as other people are". A total score can range from 0-80. In the current study, the CATS showed high internal consistency at pre-test and post-test (α = 0.96).

Mindfulness. To explore changes in perceived mindfulness, the Mindfulness Awareness and Attention Scale for Children (MAAS-C, Lawlor 2012) was used. This self-report scale consists of 15-items that are rated on a six-point Likert scale ranging from 1 'Almost Never' to 6 'Almost Always'. Example questions include: "Usually, I do not notice if my body feels tense or uncomfortable until it gets really bad." A total score can range from 0-90, whereby higher scores indicate higher levels of mindfulness. The MAAS-C has recently been validated in a sample of children

aged 9-12 years and has demonstrated good internal consistency ($\alpha = 0.84$) as well as discriminant and convergent validity (Lawlor, 2012). In the current study, the MAAS-C showed high internal consistency at pre-test and post-test ($\alpha = 0.9$).

3.3.3.2 Risk Status

In order to answer RQ5, information was gathered from children as well as their teachers. Firstly, children were asked to complete the SCAS at pre and post intervention. The clinical cut-off for anxiety (42.48; Spence, 1994) was then used to determine the "risk status" of children. More specifically, children were split into four separate groups: (1) no concerns at pre-test and post-test, (2) no concerns at pre-test but clinical concerns at post-test (3) clinical concerns at pre-test and post-test and (4) clinical concerns at pre-test but no concerns at post-test. This enabled a comparison to be made between the "risk status" of children in the intervention and comparison groups.

Teachers were also asked to rate which children in their class they considered to have clinical levels of anxiety, both before and after the intervention. They were presented with a definition of clinical anxiety (American Psychological Society, 2000; King and Ollendick, 1989) and then asked to rate either "yes" (i.e. shows clinically anxious behaviour) or "no" (i.e. does not show clinically anxious behaviour) next to the name of each child in their class. The following script was given: "Anxiety is a normal response to stress and/or danger. For some children however, their anxiety is: (a) extreme and uncontrollable, (b) in response to no specific threat and (c) associated with a range of physical and emotional symptoms as well as changes in thoughts and behaviours. These symptoms may include phobias, intense worrying,

separation anxiety, irrational thoughts and self-consciousness (King and Ollendick, 1989; American Psychological Society, 2001). In such cases, we may say that a child is displaying clinical levels of anxiety. For each child in your class, you must decide whether they display clinically anxious behaviour or not by placing a ☑ in the most appropriate box". The researcher was available to answer any questions about this definition although none were asked, suggesting that the definition was relatively clear.

3.3.3.3 Home Practice Review

To answer RQ4, data on the frequency of home practice was collected *during* the intervention in order to establish whether this had an enhancing effect on outcomes. At the start of each weekly session, children were asked to record the number of days in the previous week that they listened to the meditations. This was included within the workbooks – an example of which can be found in appendix G.

To answer RQ8, a questionnaire with two open-ended questions was designed for the purpose of the study. These questions asked: "What makes it difficult to practise at home?" and "If one thing could make home practice easier, what would it be?" Following the intervention, the children in the experimental group were invited to complete this questionnaire. The questions were read aloud to the whole class, by the researcher, and children were asked to complete the questions independently and in silence. This process took approximately 10 minutes.

3.3.3.4 Focus Groups

Whilst the focus group questions had been tentatively considered at the start of the research process, the quantitative results were analysed before the focus group transcript was finalised. This is because the purpose of the qualitative strand, in an explanatory sequential mixed-methods design, is to further explore and/or explain the initial findings (Creswell, Plano Clark, Gutmann & Hanson, 2003). A rationale for each of the focus group questions is given below. For a copy of the focus group questions, see appendix H.

Based on previous research, the first question *("If you had to explain mindfulness to somebody else in your school, what would you say?"*) was used as an "ice-breaker" to help the children feel at ease and begin working together within the discussion group format (Hennick, 2007). As can be seen in appendix H, questions 2-4 relate to perceived change in thoughts, feelings and behaviour. These questions were included as this study was only focused on outcomes related to internalising problems (i.e. anxiety and negative thoughts). Based on research showing the wide range of outcomes that mindfulness can target (Zenner, Herrnleben-Kurz & Walach, 2014), it was hypothesised that additional change may have occurred which had not been captured by the measures – perhaps owing to limited number of measures that was used. Question 5 on the focus group transcript *("What was it about mindfulness that helped you to make those changes"*) relates to mechanisms of change which was an area of interest in the outset. The final questions in the focus group transcript were related to home practice which was also an area of interest from the outset. This study did not find a relationship between home practice and therapeutic outcome, which contradicts much of the previous literature (Carmody & Baer, 2008; Huppert

& Johnson, 2010). As a result, questions were included about difficulties with home practice as well as ways to facilitate home practice further.

The focus groups were conducted in a quiet classroom and lasted approximately 40 minutes each. They were recorded using an audio recording device and then manually transcribed before analysis and interpretation.

3.3.5 Procedure

3.3.5.1 Workshop for Parents

Prior to commencing the research project, a mindfulness workshop was set up for parents. This workshop aimed to equip parents with a greater understanding of mindfulness techniques and encourage them to support their child's learning at home. However, the attendance rate was low with only six parents (7%) attending. To promote parental engagement, letters were sent to parents in week 1, week 3 and week 6 which outlined how they could support their child at home. See Appendix I for an example of this letter.

3.3.5.2 Intervention

The Mindful Attention Programme (MAP; Morris, 2015) is an eight-session, manualised programme. It aims to help children cope with everyday stressful events, by promoting awareness and acceptance of current thoughts and feelings. The programme balances formal mindfulness practices with psycho-education, paired/group work and regular homework practice. It is designed to appeal to young people and engage them through developmentally appropriate and relevant content. The sessions are typically delivered on a PowerPoint presentation which includes

relevant information, pictures and videos. To support delivery, the author of the MAP has also written an instructors manual. For a copy of the instructor's manual, see appendix J.

In this study, the eight sessions took place once a week and lasted 40 minutes each. In between the weekly sessions, teachers were asked to deliver two 10-minute meditations to the whole-class. To support this process, teachers were given a script which they could read aloud. At home, children were also invited to listen to the meditations. These were made available each week on the school website which meant that they could be readily downloaded onto mobile phones, iPads or computers. It must be noted that home practice was not made compulsory and no written work was set.

In this study, the MAP was delivered by its author to School A (experimental group) in the Spring Term. For the rest of this chapter, the author will be referred to as the programme facilitator. The MAP was delivered by the lead researcher to School B and C (comparison group) in the Summer Term. The programme facilitator is a qualified educational psychologist, experienced mindfulness practitioner and has authored several research articles highlighting the benefits of mindfulness in schools. The lead researcher had completed the Mindfulness Based Stress Reduction (MBSR) course to develop personal practice. Both authors used the MAP manual to support delivery although peer supervision was also given at various points.

3.3.6 Implementation Fidelity

The fidelity of implementation is defined as "the degree to which treatment is delivered as intended" (Yeaton & Sechrest, 1981, p.160). In this study, implementation fidelity was assessed in two ways. Firstly, the programme facilitator was asked to complete a fidelity checklist (see appendix K) at the end of each session. Previous research also suggests that the lead researcher should observe at least 20% of sessions and use the same fidelity checklist to check for consistency (Smith, Dishion, Shaw & Wilson, 2013; Walker, Shippen, Houchins & Cihak, 2007). In this study, five sessions (out of the 24 sessions delivered across three classes) were observed by the lead researcher which meets the recommended percentage. These sessions were selected randomly selected using an online random number generator, www.random.org) to ensure that there was no bias. In this study, the fidelity checklist was designed by the researcher, in line with aspects of fidelity set out in the literature (Dane & Schneider, 1998; Bishop, Pankratz, Hansen, Albritton, Albritton & Strack, 2013). This included the following:

Dosage. This refers to the number of sessions attended by participants (Dane & Schneider, 1998). To ensure that any observed change is the result of the intervention, some researchers only analyse data for children who have attended 75% or more of sessions (e.g. Collins, Woolfson & Durkin, 2013). In this study, only children who attended 75% of session (i.e. 6 out of 8 sessions) were included in the final number of participants hence why a record of attendance was kept.

Adherence. This is the extent to which the intervention is delivered as prescribed by the programme manual (Dane & Schneider, 1998). In this study, adherence was

evaluated by considering the extent to which the PowerPoint slides were followed. As shown in Table 3.3, a rating was given on a 5-point scale whereby 1 = did not follow the slides at all, 3 = used approximately half of the slides and 5 = followed all of the slides (Knowler and Frederickson, 2013). The average rating for adherence to treatment was 4.55, as rated by the programme facilitator. As stated above, five sessions were randomly observed by the researcher. The lead researcher agreed with the ratings given by the programme facilitator on 4 out of 5 occasions. This gives a concordance rate of 80%.

Table 3.3

Adherence rating given by programme facilitator

	Session Number							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Class 1	5	5	5	5	4	5	4	5
Class 2	4	4	5	4	4	4	4	5
Class 3	5	5	4	4	4	5	5	5

***Adaptations*.** This refers to the degree to which the content of a programme is modified (Bishop, Pankratz, Hansen, Albritton, Albritton & Strack, 2013). In this study, the programme facilitator was asked to explain the adaptations that were made when a response of 4 or below was given for adherence (i.e. less than 100% of the PowerPoint presentations were followed). In this study, the programme facilitator reported that the adaptations made were always related to removing a step of an activity (e.g. missing out a meditation or a slide on the PowerPoint). This was typically the result of the lesson coming to an end. On the five sessions that were

randomly observed by the researcher, there was 100% agreement with regard to the adaptations that were made.

Student Engagement. This refers to the level of participation from the children (Bishop, Pankratz, Hansen, Albritton, Albritton & Strack, 2013). Student engagement was rated on a scale of 1 (poor engagement defined as having to "pry" responses out of children; children taking a long time to follow instructions; children becoming disruptive through disengagement) to 5 (high engagement defined as children freely offering answers to questions; children showing full attention to the task; children offering constructive comments that demonstrate listening and engagement). As shown in Table 3.4, student engagement was typically very high. The average rating for student engagement was 4.5, as rated by the programme facilitator. The lead researcher agreed with the ratings given was by the programme facilitator on 4 out of 5 occasions. This gives a concordance rate of 80%.

Table 3.4

Student engagement ratings given by programme facilitator

	Session Number							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Class 1	5	5	5	4	4	5	4	4
Class 2	4	5	5	4	4	4	4	4
Class 3	5	4	5	5	5	5	4	5

3.3.7 Ethical considerations

This study was approved by the University College London Ethics Committee. In line with the BPS Code of Ethics and Conduct (2010), the ethics application set out

how the research would addresses ethical issues such as informed consent, upholding confidentiality and avoidance of harm. See appendix L for ethics application and approval letter. The key principles and how they were met are outlined below.

Informed consent. The process of obtaining informed consent took place at three levels - school, parent and child. All schools were provided with written information about the study and headteachers were asked to give consent for the research to take place in their school. For the first part of the research, parents in participating schools were sent an information leaflet with an opt-out consent form attached. Opt-out consent was granted through the ethics application as the skills taught in mindfulness (e.g. recognising thoughts and feelings, managing stress) are broadly similar to the content of PSHE lessons. Children also remained in their normal class at all times, with no change required for the intervention. Furthermore, the "universal" nature of the intervention meant that no child would be singled out. In order to obtain child assent, an information leaflet was read aloud to the whole class. Children were then invited to sign an assent form to indicate that they were willing to participate. For the focus groups, additional information leaflets were sent to parents with an opt-in consent form attached. This form of consent was required by the ethics committee as children were removed from normal lessons to discuss their thoughts and feelings. As before, additional assent was obtained from the children.

Confidentiality. For both aspects of the research, participants were told that any data published in relation to the project would be anonymised. It was further explained that confidentiality would only be breached in exceptional circumstances where there was concern regarding the safety of a child/others. Finally, this research was

conducted in line with the guidelines for adequate protection of data. Suitable anonyms were used when processing data on participants and electronic files were password protected. It was explained to all participants that data, including the audio recording of the focus group, would only be stored for as long as is necessary for the completion of this study.

3.3.8 Data Analysis

This section outlines the qualitative data analysis techniques of content analysis and thematic analysis. These techniques will be used to answer RQs 6-8.

3.3.8.1 Content Analysis.

Content analysis is a qualitative research technique which helps to identify codes and categories within a data set. Whilst it is a widely used technique, the specific type of content analysis used will be dependent on the researcher and the study (Hsieh & Shannon, 2005). An important distinction to make is between an inductive or deductive approach. In an inductive approach, the researcher allows themes and categories to emerge from the data itself. This is often referred to as a "bottom up" approach. In a deductive approach, the researcher explores whether pre-existing theories are consistent with the current data set. This is often referred to as a "top down" approach (Elo & Kyngas, 2008). In this study, an inductive approach was used as this is a new area to be researched.

In line with previous research (Stemler, 2001; Elo & Kyngas, 2008), the following steps were taken to ensure that analysis of the open-ended questions was valid and reliable. The analysis was conducted by two raters; (1) the lead researcher and (2) a

colleague of the researcher, a trainee EP on the UCL Doctorate in Educational and Child Psychology (DECPsy) course. Firstly, the children's responses to the two open-ended questions were transcribed onto a written document. Using this data set, the raters separately generated initial categories in the margin of the transcript. In this study, a category was defined as a broader theme which described the information emerging from the data (Minichiello, Aroni, Timewell & Alexander, 1990). The two raters then compared the initial categories that had been formed and discussed any differences until a consensus about the categories was reached. For the first question ("*What makes it difficult to practise at home?")*, the following categories were agreed upon

- Access to Resources (e.g. computer, Wi-Fi)
- Boredom
- Distractions from Others
- Sleepiness
- Forgetting
- Perceived Lack of Time
- Other Commitments and Interests
- No Reported Difficulty.

For the second question *("If one thing could make home practice easier, what would it be?"*), the following categories were agreed upon:

- Additional Opportunities in School
- Clips More Engaging

- Mindfulness as Homework
- Greater Parental Support
- Improved Access to Resources (e.g. computer, Wi-Fi)
- More Perceived Time
- Access to a Quiet Space
- Self-Discipline
- N/A

Using these categories, the raters independently coded the responses given by the children and counted their frequency. When used in this way, content analysis enables the researcher to derive quantitative data (e.g. percentages) from qualitative data (Krippendorff, 2004). As a final check, the percentage agreement between the two raters was assessed. The percentage agreement was calculated using the following formula: PA = A/n x 100 where *PA* = percentage agreement, *A* = number of agreements and *n* = number of segments coded (Rose, 2015). In this study, the percentage agreement was 91%, above the 80% level considered desirable (Neuendorf, 2002).

3.3.8.2 Thematic Analysis

Thematic analysis is described as "a method for identifying, analysing and reporting patterns (themes) within data" (Braun & Clarke, 2006, p.79). A thematic analysis was selected as it allows for a rigorous and systematic processing of the qualitative information (Braun & Clarke, 2006). Given that the qualitative data was used to further explore initial quantitative results, a primarily deductive approach to thematic

analysis was employed in this research. This meant that coding was completed in response to specific, pre-determined research questions (Braun & Clarke, 2006).

The guidelines for using thematic analysis in psychology were followed (shown in Table 3.5). It should be noted that movement through these stages was not linear, with different stages being revisited and revised regularly (Braun & Clark, 2006).

Table 3.5

Phases of thematic analysis (Braun & Clark, 2006)

Phase	**Description of the process**
1. Familiarise yourself with the data	• Transcribe the data • "Repeated reading" – read the data and search for meaning. Note down any initial ideas.
2. Generate initial codes	• Code data segments that appear interesting • Work systematically across the entire data set
3. Search for themes	• Sort data relevant to each code • Organise codes into possible themes • Consider sub-themes
4. Review themes	• Consider each theme in relation to the data set
5. Define and name themes	• Generate clear definitions for each theme and name them
6. Produce the report	• Select clear, representative extracts as examples • Analyse selected extracts and relate back to RQs

Phase 1 – Familiarity with the data

The process of thematic analysis began with transcription of the focus group. Following transcription, the researcher read and re-read the data in order to become familiar with the "depth and breadth of the content" (Braun & Clarke, 2006, p.87). Through repeated reading, immersion in the data allowed the identification of preliminary patterns, themes and ideas across the data set.

Phase 2 – Generate initial codes

ATLAS.ti qualitative data analysis software (version 5.6; ATLAS.ti Scientific Software Development GmbH, Berlin, Germany) was used to support the researcher in generating initial codes. Braun and Clarke (2006) define a code as an excerpt from the text that "appears interesting to the analyst" (p.18). Each transcription was systematically reviewed and coded line by line.

Phase 3 – Search for themes

Once identified, codes were organised into themes. To support this process, the researcher used thematic maps, drawn by hand, to aid the development of thematic networks.

Phase 4 – Review themes

In this phase, themes were compared against the entire data set to check that all extracts had been captured.

Phase 5 – Define and name themes

Themes were named using clear labels. These labels were thought to capture the essence of the data included within them. At this phase, sub-themes were also identified. These are "themes-within-a-theme" and can be useful for "giving structure to a particularly large and complex theme" (Braun & Clarke, 2006, p.22).

Phase 6 – Producing the report

The analysis was written up as a report including both description and interpretation of the data. A thematic map was also produced showing the themes, sub-themes and relationships between them. These relationships (identified as "co-occurring codes") were established through ATLAS.ti. In this study, co-occuring codes are defined as codes that overlap (i.e. the same segments of text may be attached to one or more code and therefore sub-theme).

3.3.8.3 Trustworthiness

The trustworthiness of the thematic analysis was ensured by examining the four criteria set out by Shenton (2003) – confirmability, credibility, transferability and dependability.

Confirmability. Confirmability refers to the extent to which the results can be verified by others. Creswell and Clark (2007) state that a peer reviewer should check at least 10% of the data to ensure that the "findings are the result of the experiences and ideas of the informants, rather than the characteristics and preferences of the researcher" (Shenton, 2003, p. 72). As a result, a colleague of the researcher, a trainee EP on the UCL Doctorate in Educational and Child Psychology (DECPsy) course was asked to review the data. In this study, the peer reviewer looked at half of a focus group transcript (approximately 16% of the data, which exceeds the recommended percentage). The transcript that was checked by the peer reviewer was randomly selected using an online rating number generator (www.random.org) to ensure that there was no bias. The peer reviewer was asked to check whether they

agreed with the initial codes that had been assigned on ATLAS.ti qualitative data analysis software. The percentage agreement was calculated using the following formula: PA = A/n x 100 where *PA* = percentage agreement, *A* = number of agreements and *n* = number of segments coded (Rose, 2015). The agreement level was 88.88%, which is above the 80% level considered desirable (Miles and Huberman, 1994). Where there were disagreements, a discussion was held to reach consensus which informed any modifications that the researcher made to the initial codes. These checks are important as there is no definitive correct interpretation of the data and involving an alternative perspective adds depth (Tracy, 2010). At a later stage, the themes and sub-themes were also subject to peer review. The peer reviewer considered all the sub-themes against their component codes, example quotations and the other sub-themes. The agreement level was 100%.

Credibility. A piece of research with high credibility will present an analysis that is an accurate representation of the original data. As part of the peer review system that was employed above, the reviewer was also asked to check the interview recordings against the transcriptions. In the 16% of data that was checked, the accuracy of transcription was high. There were three inaccuracies relating to the order of words or use of filler words which did not alter the content of the children's comments. To control for researcher bias and encourage the consideration of alternative interpretations, regular meetings with the researcher supervisor were also held. This helped to point out the researchers own biases and preferences (Shenton, 2003), ultimately giving a more accurate account.

Transferability. Transferability refers to the extent to which the findings of the thematic analysis can be applied to other contexts (Merriam, 1998). To allow the reader to make an informed judgement regarding transferability, rich descriptive data regarding the context (e.g. participant number, selection criteria, demographics of participants) must be provided (Ary, Jacobs, Razavieh & Sorensen, 2006). This allows the reader to decide whether the findings can be justifiably applied to other contexts (Shenton, 2003). As can be seen in 3.3.2.3, sufficient detail was provided to meet the criteria of transferability.

Dependability. Dependability is the "ability of another investigator to follow the decision or audit trail" (Beck, 1993, p. 264) that the researcher makes at every stage of the data analysis (Ary, Jacobs, Razavieh, & Sorensen, 2006). In this study, the progression from the initial data set to the final sub-themes and themes is shown in appendices M-O. In appendix M, a screenshot shows the initial codes that were generated in ATLAS.ti qualitative data analysis software. This is consistent with Phase 2 of the Braun and Clarke (2006) model. In appendix N, a summary is given which shows how the initial codes were organised into potential themes. This is consistent with Phase 3 of the Braun and Clarke (2006) model. Finally, appendix O includes tables which detail the text segments which make up each theme and sub-theme. This is consistent with Phase 5 of the Braun and Clarke (2006) model.

3.4 Results

3.4.1 Incomplete Data

A number of children were removed from the data analysis. Several children were absent on the day that the questionnaires were administered (n = 5 in the experimental group and n = 4 in the comparison group) which meant that there was incomplete data. In the comparison group, two children moved schools during the research project which meant that they were lost due to attrition. Finally, a number of children failed to attend 6 or more sessions (n = 3 in the experimental group) which was considered as part of implementation fidelity. As a result, data was analysed for 148 children (74 in the experimental group and 74 in the comparison group).

3.4.2 Descriptive Statistics

Table 3.6 shows the means and standard deviations for the outcome measures. For the intervention group, there is a reduction in anxiety (as measured by the SCAS) from pre-test to post-test. Interestingly however, the comparison group also show a reduction in anxiety scores over time. This is an interesting trend given that the children received treatment as normal (i.e. normal PSHE lessons). For the intervention group, there is also a reduction in negative automatic thoughts (as measured by the CATS) from pre-test to post-test. The comparison group show an increase in negative automatic thoughts over time. Finally, the Mindfulness Attention and Awareness Scale for Children (MAAS-C) was used to explore changes in mindfulness. This measure is positively rated (i.e. higher scores indicate higher levels of mindfulness). For the intervention group, there is an increase in mindfulness

from pre-test to post-test. Interestingly however, the comparison group also showed a slight increase in mindfulness over time.

Table 3.6

Means and standard deviations for the outcome measures

	SCAS				**CATS**				**MAAS-C**			
	Pre		Post		Pre		Post		Pre		Post	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Intervention	41.85	23.11	32.78	21.24	21.97	19.73	19.08	18.85	60.62	17.17	68.43	16.27
Comparison	33.03	17.04	29.57	18.46	16.62	16.24	17.53	16.96	65.78	15.55	68.47	14.51

*SCAS = Spence Children's Anxiety Scale, CATS = Children's Automatic Thoughts Scale, MAAS-C = Mindfulness Attention and Awareness Scale for Children

3.4.3 Rationale for Statistical Decisions

When analysing quantitative data, a number of important decisions need to be made. This includes checking whether the assumptions for parametric statistics have been met, deciding whether to include/exclude outliers and whether to apply a correction for multiple comparisons (i.e. Bonferroni). This sub-section will provide a rationale for the statistical decisions that have been made.

3.4.3.1 Assumptions

There are a number of assumptions that must be met in order for parametric tests to be used. This includes normality of distribution and homogeneity of variance, both of which can be tested using SPSS (Field, 2013). The Levene's Test was used to establish homogeneity of variance and was found to be non-significant ($p > 0.05$). This suggests that this assumption of ANOVA was met. To explore normality of distribution, histogram plots were visually inspected. Skewness and kurtosis values were also checked. This highlighted a positive skew on the measures of anxiety and negative automatic thoughts as well as a negative skew on the measure of mindfulness. These findings suggest that the normality of distribution assumption was violated – indicating a need for non-parametric tests. However, there is not yet a non-parametric equivalent to the Mixed Design Analysis of Variance (ANOVA). To correct for non-normality, some statisticians advocate "transforming" the data. This is highly debated within the literature (Glass, Peckham & Sanders, 1972; Grayson, 2004) with Field (2013) concluding that it is preferable to "use robust procedures, where possible, in preference to transforming the data" (p.202). There is evidence to suggest that ANOVA is robust to slightly skewed data and that the rate of "false-

positives" is rarely affected by the violation of this assumption (Pearson, 1931; Glass, Peckham, Sanders, 1972; Lindman, 1992; Norman, 2010). As a result, the researcher decided to proceed with parametric statistics.

3.4.3.2 Outliers

As stated by Field (2009), analysis of quantitative data requires an awareness of outliers. An outlier is defined as "a score very different from the rest of the data" (p.98), which can bias the mean and inflate the standard deviation. In this study, the presence of outliers was explored using a boxplot. Three participants (on the measure of negative thoughts) had scores that were denoted with an asterisk, indicating that their score was three times greater than the inter-quartile range. As a result, statistical tests were conducted on data with outliers and data without outliers to determine whether the outliers had an impact on the results. As there was no difference in the statistical significance, the results are reported with the outliers included. This is also because the outliers most likely reflect the variation in scores among a universal sample i.e. some children score at floor level whilst others score at ceiling level.

3.4.3.3 Bonferroni Correction

In this study, a decision was made not to use a Bonferroni correction to correct for the increased possibility of making a Type 1 error (rejecting the null hypothesis when it is true; Pallant, 2013) when conducting multiple comparisons. This is for two reasons. Firstly, the Bonferroni correction is considered by many statisticians to be too conservative an adjustment when outcome measures are positively correlated (Senn, 2007) which they are in this piece of research. Secondly, many researchers

have proposed that the best way to account for multiple comparisons is to adequately describe all tests of significance and their outcomes (Perneger, 1998; Senn, 2007) so that the reader can make their own judgements about the data. This data is provided within the next section.

3.4.4 Analysis

The results in relation to each RQ are considered below. Firstly, the inferential statistics are presented which aim to answer RQs 1-5. An account is then provided of the thematic analysis and content analysis, which serve to answer RQs 6-8.

3.4.4.1 Findings for Research Question 1

What is the impact of mindfulness training on the overall anxiety levels (as measured by the SCAS) of children aged 9-10 years?

An independent samples t-test showed that the two groups (intervention and comparison) were statistically significant pre-test: t (146) = 2.645, p = 0.009. As a result, a one-way Analysis of Covariance (ANCOVA) was run on the data. This analysis used group (intervention and comparison) as the independent variable, scores at post-test as the dependent variable and the pre-test scores as a co-variate. The use of ANCOVA helps to statistically adjust for pre-existing differences between the groups (Norris, Qureshi, Howitt & Cramer, 2014).

There was a non-significant effect of group on anxiety scores, when controlling for the pre-test scores: F (1, 145) = 3.841, p = .052, partial eta squared = .026 (small effect; Cohen, 1998). In relation to RQ1, these findings indicate that there is some

evidence that mindfulness training reduces the anxiety levels of children although this did not reach statistical significance.

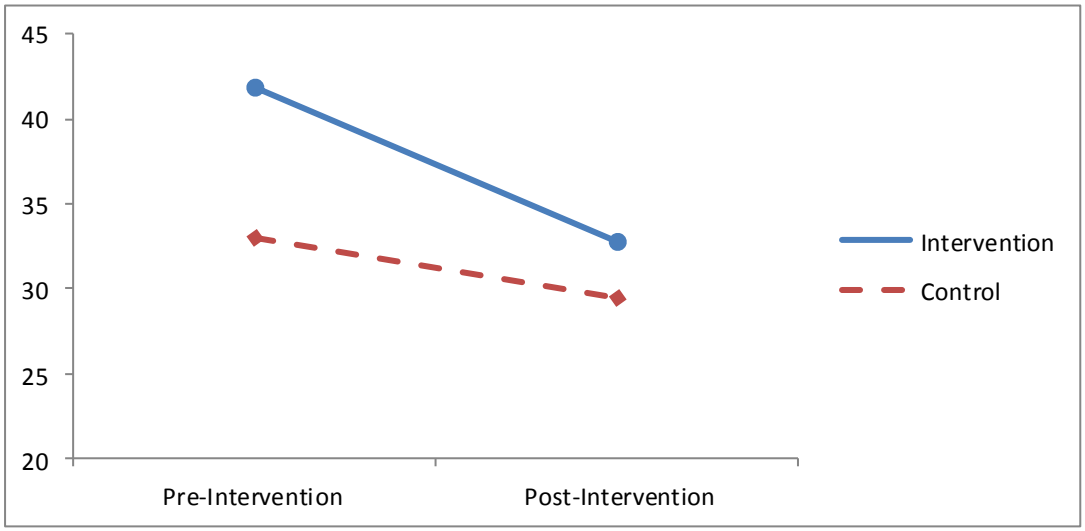


Figure 3.3. Spence Children's Anxiety Scale (SCAS): Results from Pre-Test to Post-Test

3.4.4.2 Findings for Research Question 2

What is the impact of mindfulness training on the negative automatic thoughts (as measured by the CATS) of children aged 9-10 years?

An independent samples t-test showed that the two groups (intervention and comparison) were not statistically significant pre-test: t (146) = 1.801, p = 0.074. This removed the need for an ANCOVA.

A Mixed Analysis of Variance (ANOVA) with group (intervention and comparison) as the between subjects variable and time (pre and post intervention) as the within subjects variable, was performed on the data. There was no significant main effect of

group: F (1, 146) = 1.530, p = 0.218, partial eta squared = 0.01 (small effect; Cohen, 1998). There was no significant main effect of time: F (1, 146) = 1.026, p = 0.313, partial eta-squared = 0.007. There was no significant interaction between group and time: F (1, 146) = 3.748, p = 0.055, partial eta-squared = 0.025 (small effect; Cohen, 1998). This is demonstrated visually in Figure 3.4. In relation to RQ2, these findings indicate that there is some evidence that mindfulness training reduces the frequency of negative automatic thoughts although this did not reach statistical significance.

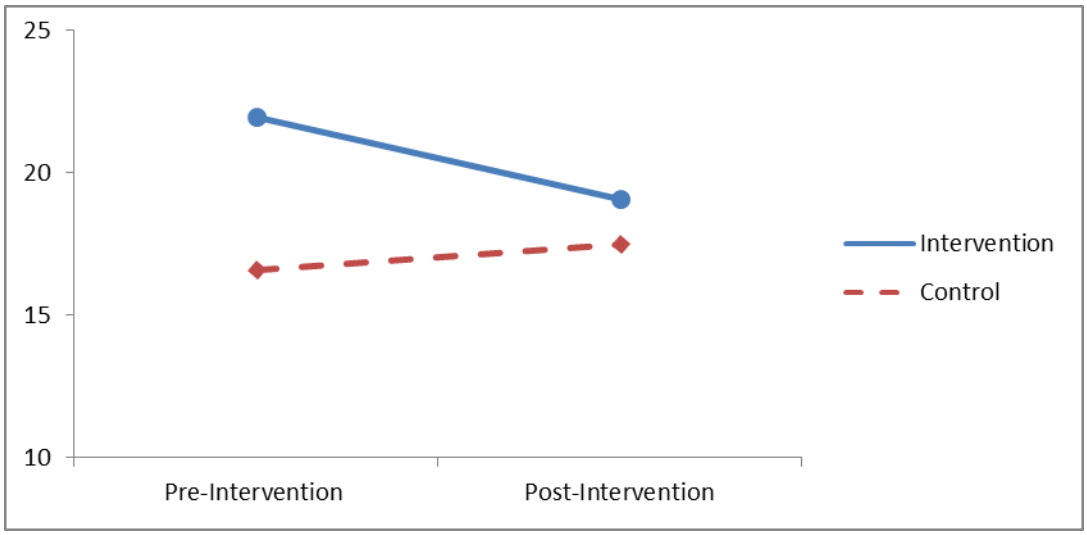


Figure 3.4. Children's Automatic Thoughts Scale (CATS): Results from Pre-test to Post-test

3.4.4.3 Findings for Research Question 3

Are there improvements in mindfulness awareness (as measured by the MAAS-C) over the course of the intervention?

An independent samples t-test showed that the two groups (intervention and comparison) were not statistically significant pre-test: t (146) = -1.92, p = 0.057. This

removed the need for an ANCOVA. A mixed Analysis of Variance (ANOVA) with group (intervention and comparison) as the between subjects variable and time (pre and post intervention) as the within subjects variable, was performed on the data. There was no significant main effect of group: F (1, 146) = 1.197, p = 0.276, partial eta-squared = 0.008. There was a significant main effect of time: F (1, 146) = 23.258, p < 0.001, partial eta-squared = 0.137 (small effect; Cohen, 1998). A significant interaction was found between group and time: F (1, 146) = 5.534, p = 0.02, partial eta-squared = 0.037 (small effect; Cohen, 1998).

Follow up t-tests were conducted to unpick the significant interaction. These tests revealed that the mindfulness scores for the intervention group improved significantly from pre-test to post-test (t (73) = -4.767, p < 0.001) whilst the mindfulness scores for the comparison group did not (t (73) = -1.876, p = 0.065). This is demonstrated visually in Figure 3.5 and indicates that, in relation to RQ3, the children became more mindful (as measured by the MAAS-C) over the course of the mindfulness intervention.

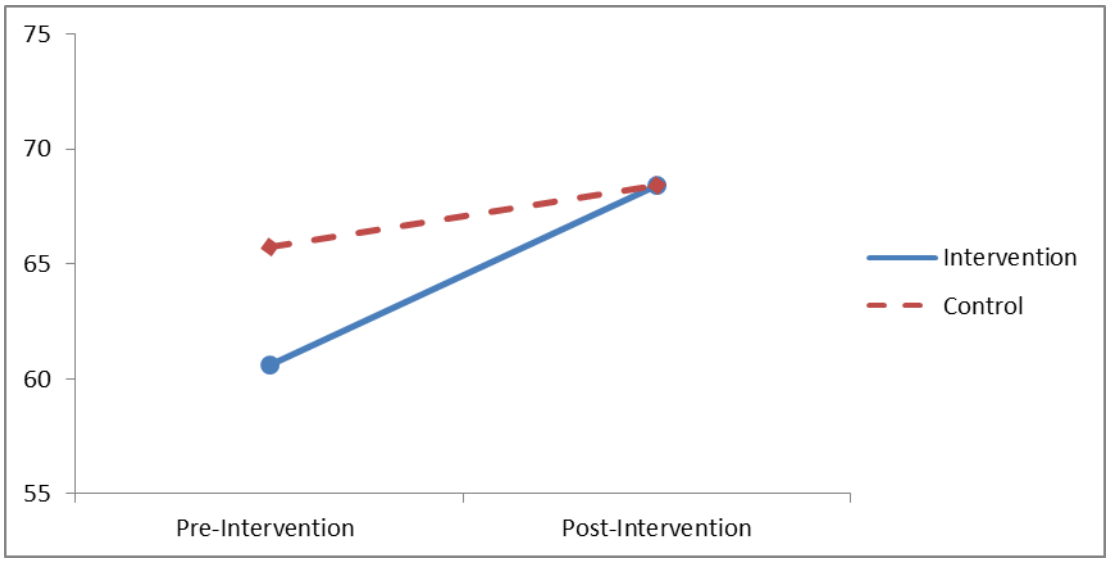


Figure 3.5. Mindfulness Attention and Awareness Scale for Children (MAAS-C): Results from Pre-Test to Post-Test

3.4.4.4. Findings for Research Question 4

Is a reduction in anxiety over time (as measured by the SCAS) related to the amount of home practice between sessions?

The data indicated that that home practice was rarely completed (*M* = 4.7 days, *SD* = 6.41, range = 0-26). A Pearson's correlation was applied to explore the relationship between change in anxiety scores and amount of home practice. Change scores (pre-test minus post-test) on the SCAS were correlated with total number of home practice sessions. The correlation was not statistically significant*: r* (74) = -0.157, *p* = 0.183, showing that the reduction in anxiety over time was not related to the amount of home practice between sessions.

3.4.4.5 Findings for Research Question 5

What is the impact of mindfulness training on the "risk status" of children aged 9-10 years?

To answer this research question, two sources of information were used (scores on the SCAS and teacher rating). For both sources of information, four separate groups were created: (1) no concerns at pre-test and post-test, (2) no concerns at pre-test but clinical concerns at post-test (3) clinical concerns at pre-test and post-test and (4) clinical concerns at pre-test but no concerns at post-test.

The data from the SCAS is presented in Table 3.7. Chi squared analyses were conducted to determine whether there was a significant relationship between risk status and condition (i.e. intervention group or comparison group). However, the expected counts were less than 5 which means that the chi squared analyses can be invalid (Hinkle, Wiersma & Jurs, 1998). As a result, the Fisher's exact test was used. As reported by Munro (2005), Fisher's exact test is more appropriate than a Pearson's chi-square, particularly when "sample sizes and expected frequencies are small" (p. 119). Using a Fisher's exact test, a significant relationship between risk status and condition was found ($p = 0.018$). To unpick this relationship and see whether the effect was in the hypothesised direction, the results for children who were clinically concerning at pre-test were analysed separately using a chi-squared analysis. The results for this group are shown in Table 3.8.

Table 3.7

Self-report rating of risk status

Risk Status	Condition	
	Intervention (*n* = 74)	**Comparison (*n* = 74)**
% of children for whom there were no concerns at pre-test and post-test	54% (*n* = 40)	70.3% (*n*= 52)
% of children for whom there were clinical concerns at pre-test and post-test (i.e. remained at risk)	25.7% (*n* = 19)	18.9% (*n* = 14)
% of children for whom there were clinical concerns at pre-test but no concerns at post-test (i.e. made improvement)	18.9% (*n* = 14)	5.4% (*n* = 4)
% of children for whom there were no concerns at pre-test but clinical concerns at post-test (i.e. got worse)	1.4% (*n* = 1)	5.4% (*n* = 4)

Table 3.8

Risk analysis for children who were clinically concerning at pre-test

Risk Status	Condition	
	Intervention (*n* = 33)	**Comparison (*n* = 18)**
% of children for whom there were clinical concerns at pre-test and post-test (i.e. remained at risk)	57.6% (*n* = 19)	77.8% (*n* = 14)
% of children for whom there were clinical concerns at pre-test but no concerns at post-test (i.e. made improvement)	42.6% (*n* = 14)	22.2% (*n* = 4)

This chi-squared analysis showed a non-significant relationship between risk status and condition: X^2 (1) = 2.081, p = 0.149. In other words, the MAP did not have a significant effect on the risk status of children.

In order to triangulate some of the data, the self-report ratings in Table 3.7 are compared to the teacher ratings in Table 3.9. Visual inspection of these tables indicates a disparity between the pupil ratings and the teacher ratings. Notably, teachers within the intervention group considered that 79.7% of children were not clinically concerning at either pre-test or post-test (see Table 3.9). In contrast, only 54% of children completing the SCAS in the intervention group gave responses that indicated no clinical concern about their anxiety levels (see Table 3.7). This suggests that teachers do not identify all children who self-report with clinical levels of anxiety.

Table 3.9

Teacher rating of risk status

Risk Status	**Condition**	
	Intervention (*n* = 74)	**Comparison (*n* = 74)**
% of children for whom there were no concerns at pre-test and post-test	79.7% (*n* = 59)	83.8% (*n*= 62)
% of children for whom there were clinical concerns at pre-test and post-test (i.e. remained at risk)	8.1% (*n* = 6)	12.2% (*n* = 9)
% of children for whom there were clinical concerns at pre-test but no concerns at post-test (i.e. made improvement)	6.7% (*n* = 5)	2.7% (*n* = 2)
% of children for whom there were no concerns at pre-test but clinical concerns at post-test (i.e. got worse)	5.4% (*n* = 4)	1.3% (*n* = 1)

3.4.4.6 Findings for Research Questions 6-8

3.4.4.6.1 Content Analysis

To address RQ8 (*What do children perceive to be the challenges of home practice and how could these be overcome*), a content analysis was applied to the two open-ended questions. These questions were: "What makes it difficult to practise at home?" and "If one thing could make home practice easier, what would it be?" This analysis enabled the calculation of quantitative data (i.e. percentages) from qualitative data which are presented in Table 3.10 and Table 3.11. For a full description of each code, see Appendix P.

Table 3.10

Difficulties with home practice: Percentages for each category

Category	***% (n)***
Distractions from others	21.6 (16)
Other commitments and interests	21.6 (16)
Access to resources (e.g. computer, Wi-Fi)	13.5 (10)
Perceived lack of time	13.5 (10)
Boredom	12.2 (9)
Sleepiness	8.1 (6)
Forgetting	4.1 (3)
No reported difficulty	5.4 (4)

Note. Entries refer to the percentage of respondents providing an answer within the category and the number of respondents providing an answer within the category

As can be seen in Table 3.10, children report a number of difficulties with home practice. Distractions from others (e.g. "P42: People kept disturbing me") were cited most frequently, with 21.6% of participants reporting that this was the main difficulty with practising at home. Other commitments and interests (e.g. "P7: I was

always busy doing other things like homework and tuition") was also cited with equal frequency.

Table 3.11

Ways to make home practice easier: Percentages for each category

Category	***% (n)***
Access to a quiet space	23 (17)
Improved access to resources (e.g. computer, Wi-Fi)	13.5 (10)
Additional opportunities in school	12.2 (9)
Greater parental support	10.8 (8)
More perceived time	10.8 (8)
N/A	9.5 (7)
Clips more engaging	8.1 (6)
Self-discipline	6.7 (5)
Mindfulness as homework	5.4 (4)

Note: Entries refer to the percentage of respondents providing an answer within the category and the number of respondents providing an answer within the category.

As can be seen in Table 3.11, a number of recommendations were made to facilitate home practice within the home. The most frequently cited response was access to a quiet space (e.g. "P49: I could sit somewhere away from the noise or my mum could look after the kids whilst I listen to the clip in peace") which was suggested by 23% of children. Improved access to resources (e.g. computer, Wi-Fi) was given as a response by 13.5% of children. Finally, a recommendation about additional opportunities in school (e.g." P68: Do it in school more because then everyone gets to listen") was given by 12.2% of children.

3.4.4.6.1 Thematic Analysis

Thematic analysis (Braun & Clarke, 2006) was used to address RQs 6-8 which were:

- What is the impact of mindfulness on thoughts and feelings, from the children's perspective?
- How does mindfulness improve well-being i.e. what are the mechanisms of change?
- What do children perceive to be the challenges of home practice and how could these be overcome?

Three main themes were identified in response to these research questions. Each theme is comprised of several sub-themes (see Table 3.12). For a complete list of the text extracts related to each theme and sub-theme, see appendix O. It should be noted that all participants have been given a research number to protect their anonymity.

Table 3.12

Summary of main themes and sub-themes from thematic analysis

Theme	*Sub-theme*
Reported change	• Reduction of worry (cognitions and emotion) • Reduction of anger • Reduction in physical tension
Mechanisms of change	• Increased positive cognition • Increased cognitive distancing • Increased attention/awareness
Home Practice	• Benefits • Difficulties • Future

Main Theme: Reported Change

A. Reduction of worry (cognitions and emotion)

The first sub-theme relates to a reduction in worry. Across the focus groups, ten children described their experiences of worrying less. The specific examples offered by the children suggest that they had an awareness of mental events and an ability to distinguish between thoughts and feelings.

P13: "Before, every time I used to get upset if people we mean to me… I would have thoughts like "I'm such an idiot", "Why did I say that?" or "I'm so stupid!" or "I shouldn't be born". I still have those thoughts but they are reduced… I have them less often"

P7: "If there is pressure then I don't tend to worry about what it is when I remember what we'd done in mindfulness. It helps me to let those thoughts go away. I feel better than I did before".

B. Reduction of Anger

The second sub-theme relates to reduced anger. During session 7 of the MAP, the children were asked to note what happens when they try to complete a frustrating puzzle. Rather than judging the experience, rejecting it or getting caught up in thoughts, the children were invited to re-focus on their breathing. Across the focus groups, seven children described a reduction in the emotion of anger – noticeable outside of the classroom experience.

P15: "I used to punch my brother really hard before when he made me angry. Now I just breathe and let my angry thoughts go away".

P7: "I used to have a bad temper sometimes. Like… my brother and sister… if they annoyed me then I would have a bad temper and start shouting at them and then I'd be really angry for the rest of the day. Now, in my behaviour – I can handle it a little bit more and share my feelings with my brother and sister so that they understand. I don't shout at them as much anymore".

C. Reduction in Physical Tension

The third sub-theme relates to reduced physical tension. Across the focus groups, several children used words such as "calmness" and "relaxation" which were captured within this sub-theme.

P12: "What I would say that is… Mindfulness is about…. your breathing and being calm. It is to do with your body and how you feel".

P7: "It has caused me to feel differently because I'm quite more relaxed now".

Main Theme: Mechanisms of Change

A. Increased Positive Cognition

Across the focus groups, six children reported using positive thinking which suggests that this may have operated as a mechanism of change for the children. In this sub-theme, comments regarding a change in cognition were included.

P6: "It made me realise that I don't need to think about all those negative things so much. I can think happy thoughts instead".

P12: "Now I've got more confidence in myself and mindfulness has helped me to take away all those bad, negative thoughts and put them into more positive thoughts"

B. Increased cognitive distancing

A second sub-theme relates to the process of distancing. This was defined as being able to observe thoughts and feelings as passing events, rather than valid reflections of reality. It also captured the ability to "let go" of negative automatic thought patterns that typify anxiety and depression. Across the focus groups, seven participants described change that was consistent with this definition.

P7: "*Sometimes, thoughts come along like… some things that have happened in the past. They just make me angry and angrier then I forget it. Sometimes it comes back again. But then, I remember what Mr Morris said to us…. to just let those thoughts*

drift away and to do that every time it comes to you. That has really helped"

Two children also showed an understanding that thoughts were not valid reflections of reality. For example:

P2: "Even if you have all of these thoughts popping into your head, like about yourself then most of the time, it's not really real"

C. Increased attention/awareness

Across the focus groups, ten children reported intentionally focusing on the present moment. This was often referred to as "concentration". Some of these children also reported that being in the present moment meant that they had a greater awareness of their environment, and in two cases – food. ‘

P12: "Sometimes…. I used to think about a lot of things like… What's going to happen there? What else might happen? I sometimes think of one thing now. When you're doing work at school, I usually get distracted really easily. Now I get less distracted and leave what I'm thinking about".

P13: "I tend to eat a lot slower now because I like to appreciate my food. At least once or twice a day…. I always eat at least one bite mindfully"

Main Theme: Home Practice

A. Benefits

This sub-theme relates to the benefits of home practice. Across the focus groups, three children described how home practice was supported by their parents. Two children also explained that home practice had benefits for their whole family – perhaps suggesting that they also received parental support. Two children also reported that they found it easier to concentrate at home and enjoyed choosing when to listen to the clips.

P5: "The clips really help me, and other people in my family, to think more clearly. We have been practising to notice body sensations and thoughts"

P10: "I told my mum about mindfulness and she kept going on about the breathing in and breathing out. When I got really angry then she would say like…. Breathe in and breathe out"

B. Difficulties

The second sub-theme relates to difficulties with home practice. Across the focus groups, six children reported that distractions within the home made it difficult to practise. Two participants reported that they had limited time to listen to the mindfulness clips as a result of homework and other commitments. One participant reported that they fell asleep.

P4: "At home, my Mum might be doing the hovering and my dad is painting. Other times, my Mum is doing Indian cooking or my Dad is drilling a hole. It was so hard to find somewhere quiet"

P6: "I find it hard when I am tired or I have lots of homework. There isn't always time to practise. Also when there are other people on the laptop".

C. Future

The final sub-theme related to ways in which home practice could be increased. Across the focus groups, six participants reported that it would be easier to practise at home if they had a quiet space without distractions. Two children talked about support from others – such as parents or teachers – and suggested that there might need to be an initiative for listening to the mediations.

P5: "It would be good to have a place that isn't too loud or a place that you won't be disturbed"

P15: "Maybe your teacher could set that as your challenge. You could get house points"

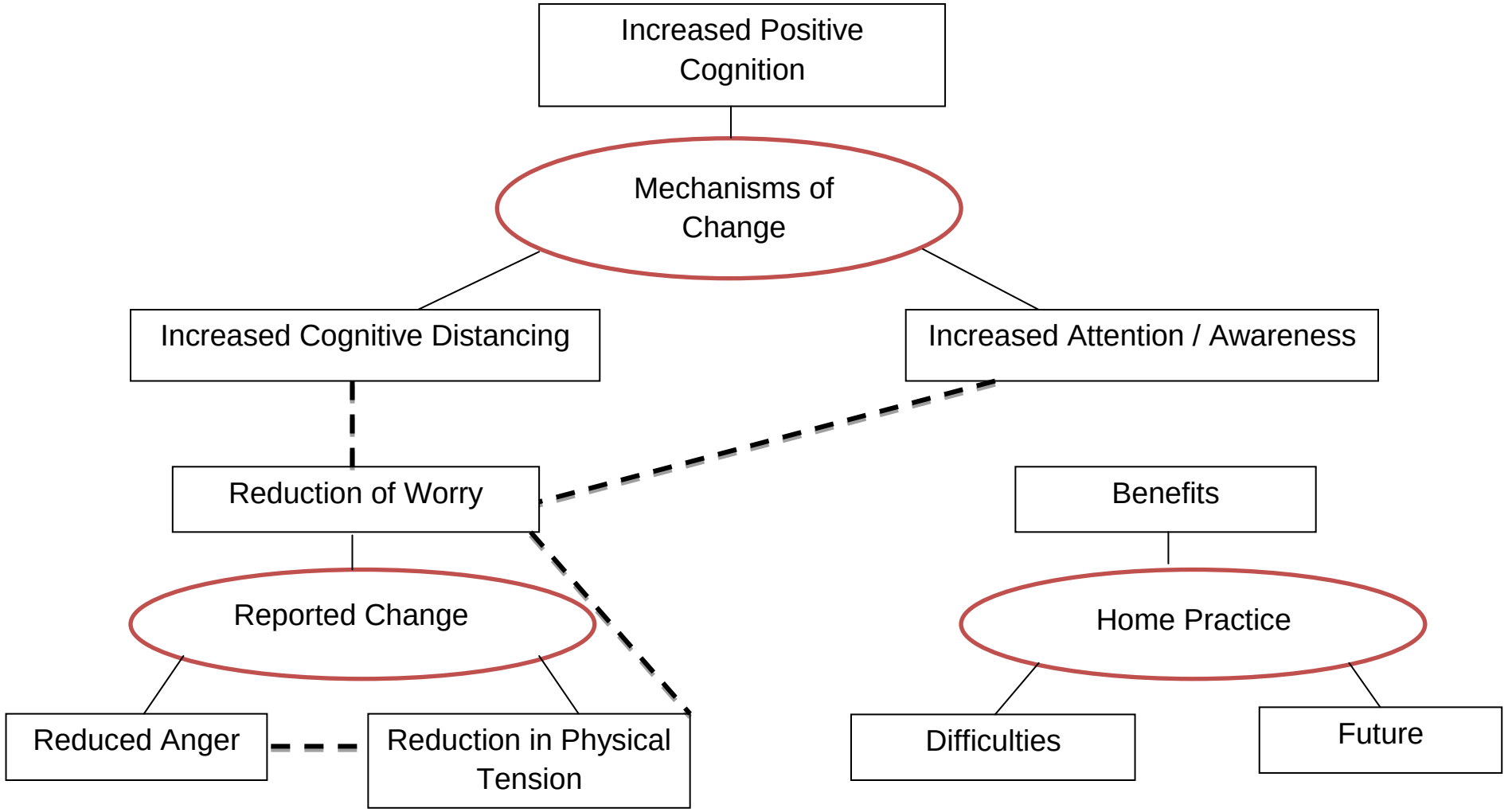
Thematic Map

The final stage of the thematic analysis involved creation of the thematic map. This refers to a visual presentation of the themes, sub-themes and relationships between them (Braun & Clarke, 2006). In Figure 3.6, the main themes are represented within ellipses whilst the sub-themes are represented within rectangles. The relationships between sub-themes are shown by a dotted line. This dotted line indicates that the sub-themes are linked by similar quotations or text segments from the initial transcript, providing support for a relationship between them. The process of thematic mapping provides a visual account of the thematic analysis.

As shown in Figure 3.6, reduction in physical tension was associated with a reduction in worry and reduced anger. Furthermore, reduction of worry was associated with two key mechanisms of change (increased attention/awareness and increased cognitive distancing). The possible reasons for these relationships are outlined in section 3.5.1.6.

Figure 3.6

Thematic Map



3.5 Discussion

3.5.1 Discussion of Research Questions

This study used a mixed methods design to explore the possible benefits of the Mindful Attention Programme (MAP). In the section, the results for each RQ are discussed in relation to pertinent research.

3.5.1.1 Anxiety

RQ1 asked: What is the impact of mindfulness training on the overall anxiety levels (as measured by the Spence Children's Anxiety Scale) of children aged 9-10 years? In this study, there was some evidence to suggest that the MAP reduced the anxiety levels of children aged 9-10 years although this did not achieve statistical significance ($p = 0.052$). Given that previous research has shown mindfulness programmes can be effective in reducing anxiety levels in universal populations (Sibinga et al. 2013; Van de Weijer-Bergsma Langenberg, Brandsma, Oort & Bögels, 2012) and the effect size in this study (partial eta-squared = 0.026 (small effect); Cohen, 1998) was similar in size to other pieces of research with larger samples (e.g. Van de Weijer-Bergsma Langenberg, Brandsma, Oort & Bögels, 2012), there is a clear need for replication. This is because the MAP may still have some practical significance with regard to other programmes that are available.

3.5.1.2 Negative Automatic Thoughts

RQ2 asked: What is the impact of mindfulness training on the negative automatic thoughts (as measured by the Children's Automatic Thoughts Scale) of children aged

9-10 years?" In this study, there was no significant interaction between group and time for Children's Automatic Thoughts Scale (CATS). This suggests that, for the universal population of children aged 9-10 years, the MAP was not effective in reducing the frequency of negative automatic thoughts. However, once again, the p-value was close to significance ($p = 0.055$) which indicates a need for replication. Given the finding that cognitions play a crucial role in the maintence of anxiety (Beck & Clark, 1997; Schneiring & Rapee, 2002), one might have hypothesised that the findings from RQ1 and RQ2 would be related. Interestingly however, the impact of mindfulness programmes on cognitions has been neglected in previous research. One possible explanation for this is that suitable measures are sparse (Hogendoorn et al. 2010). In this study, attempts were made to measure the frequency of negative automatic thoughts. Whilst research suggests a link between the frequencies of negative thoughts and anxiety, there is also some evidence to suggest that it is the *intensity* of thoughts that differentiates children with clinical and sub-clinical levels of anxiety (Perrin & Last, 1997; Silverman, La Greca & Wasserstein, 1995). However, finding appropriate measures to capture this information is challenging because existing measures such as the Children's Automatic Thoughts Scale (CATS) are only designed to capture information about frequency.

3.5.1.3 Mindfulness Scores

RQ3 asked: Are there improvements in mindfulness awareness (as measured by the Mindful Attention and Awareness Scale for Children) over the course of the intervention? In this study, children in the intervention group showed a significant increase in their scores on the MAAS-C from pre-test to post-test, indicating the MAP is effective in improving levels of mindfulness in children in aged 9-10 years.

This finding also provides evidence that the MAAS-C is sensitive to change and suggests that any observed effects are likely to be the result of changes in the desired construct (i.e. mindfulness). Since its validation in 2012, the sensitivity of the MAAS-C has also been highlighted in other research. Schonert-Reichl et al. (2015) evaluated the impact of a MindUp intervention on a range of outcomes, including mindfulness (as measured by the MAAS-C). It was found that that the MindUp intervention was effective in increasing levels of mindfulness from pre-test to post-test (p = .006).

3.5.1.4 Home Practice

There were two RQs which related to home practice (RQ4: Is a reduction in anxiety over time, as measured by the Spence Children's Anxiety Scale, related to the amount of home practice between sessions and RQ8: What do children perceive to be the challenges of home practice and how could these be overcome). Previous studies with adults have shown that the time spent engaging in home practice is significantly related to outcome (Carmody and Baer 2008; Carson, Carson, Gil & Baucom, 2004) whilst research with adolescents has shown similar effects (Huppert & Johnson, 2010). In this research, there was no correlation between change scores on the SCAS and the total number of practice sessions completed at home. This could be interpreted in several different ways. Firstly, it is possible that there are developmental differences in terms of the benefits of home practice for younger children. An alternative explanation relates to the frequency with which the children practised at home. After session 2 of the MAP, the children were invited to practise at home on a daily basis. This means that they had the opportunity to practise for a total of 49 days across the course of the intervention. However, the data indicated

that home practice was rarely completed by the children (*M* = 4.7 days). It could therefore be argued that there is a lack of data to reliably conclude that home practice does not have an enhancing effect on outcomes and suggests that there may have been a number of barriers to practising at home.

Findings from the content analysis showed that there were many barriers to practising at home including distractions from others, other commitments and interests and access to resources. The children suggested a number of ways to make home practice easier including access to a quiet space and improved access to resources (e.g. computer, WiFi). These issues were also highlighted through a thematic analysis of the focus group transcripts. On reflection, one could argue that some of these issues could be eliminated through greater parental support – a pre-requisite for many mindfulness programmes (see Burdick, 2014; Hwang & Kearney, 2015). In this study, attempts were made to engage parents in the process. However, the attendance rate at the initial parent workshop was very low (7%). Furthermore, there was no guarantee that the letters sent to parents were read, understood or applied. Within the literature, it is often argued that interventions which focus solely on the child and ignore the wider ecological context may not be sufficient (Spence & Shortt, 2007). In future studies, it seems paramount that home practice is supported although this may be best achieved by first thinking about ways to equip parents with a knowledge and understanding of mindfulness. An alternative suggestion, made by the children, would be to include additional opportunities to practise in school so that "everyone gets to listen". Whilst this is becoming a central part of many mindfulness programmes (e.g. Van de Weijer-Bergsma Langenberg, Brandsma, Oort & Bögels, 2012), there are many programmes that do not yet include this component.

3.5.1.5 Risk Status

RQ5 asked: What is the impact of mindfulness training on the "risk status" of children aged 9-10 years? Within the literature, there is an on-going debate about whether universal programmes are an effective mode of delivery. Some argue that universal programmes can reduce stigmatisation, enhance peer support and avoid the need for expensive, time-consuming and imperfect screening procedures (Amburster, Andrews, Couenhoven, & Blau, 1999; Evans, 1999). Others argue that selective/indicated approaches are preferable as "universal programmes may not be sufficiently focused on the specific problems of individual students to help those who are more symptomatic" (Stallard et al., 2012, p.5). In this study, it was found that the MAP did not have a significant effect on the risk status of children. Given the lack of statistical significance, one might conclude that the MAP would be best delivered to selective (i.e. children with risk factor such as an anxious parent) or indicated (i.e. children with threshold levels of anxiety) populations. However, further replication is required before full conclusions can be made about the mode of delivery with the greatest reach.

As part of the risk status analysis, data was also collected from teachers. The findings showed that teachers are relatively poor at identifying children with clinical levels of anxiety, a finding that is consistent with previous research **(**Kendall & Flannery-Schroeder, 1998; Headley & Campbell, 2011). Whilst schools are an ideal setting to identify and respond to concerns about the mental health of children (Rickwood, 2005), reports from teachers suggest that they often feel inadequately prepared to recognise and support children with mental health concerns (Moor et al. 2000; Rothi, Leavey & Best, 2008). This may reflect the fact that many students with internalising

difficulties often fit the profile of an ideal pupil: docile, quiet, and compliant (Gresham & Lopez, 1996). As noted by Gresham and Kern (2004), children with internalising difficulties can be difficult to observe as many conform to classroom behavioural expectations, do not challenge the authority of adults and do not disrupt the activities of other students. Importantly however, these children are often experiencing emotional dysregulation and need to have their difficulties identified, understood and supported. This may suggest a role for additional training in this area.

3.5.1.6 Reported Change in Thoughts and Feelings

RQ6 asked: What is the impact of mindfulness on thoughts and feelings, from the children's perspective? The thematic analysis showed that children reported change in three areas: reduction of worry, reduction of anger and reduction in physical tension. The first sub-theme of reduced worry is unsurprising given that worry is the "cognitive component of anxiety" (McCann, Stewin & Short, 1991) and the children selected for the focus group had shown the greatest change in anxiety from pre-test to post-test. As with RQ2, the impact of mindfulness programmes on cognitions has been neglected in previous research with children. However, the evidence gathered here suggested that this is an area that warrants further investigation – either qualitatively or quantitatively. This is particularly pertinent given that there is a wealth of evidence from the adult literature to suggest that mindfulness programmes are effective in reducing worry (Lenze et al. 2014; Delgado et al. 2010). Furthermore, the nature of mindfulness practice means that reduced worry is a likely outcome. Firstly, being taught to "let go" of automatic thought patterns that typify anxiety (Frewen, Evans, Maraj, Dozois & Partridge, 2008) is likely to have a positive effect on the frequency and intensity of worry. Secondly, adopting a present moment

awanress may mean that children's attention is less susceptible to being hijacked by inaccurate and distress provoking cognitions (Kabat-Zinn, 2003; Greeson & Brantley, 2009).

The second sub-theme of reduced anger is consistent with previous research indicating that externalising difficulties can be alleviated through mindfulness (Lee, Semple, Rosa, Miller, 2008; Bögels, Hoogstad, van Dun, de Schutter & Restifo, 2008). In one study with children aged 9-12 years, there was evidence of a significant reduction in scores on the externalising problems scale of the Child Behaviour Checklist (CBCL) after a 12-week mindfulness intervention. When further exploring the finding with children, one child reported that: "*Mindfulness has showed me to control my anger. And not get angry when being teased. I practise my breathing exercise. It helped me cool down and think what can happen before I get in troubl*e." (Lee, Semple, Rosa, Miller, 2008). These findings concur with the current research and indicate that this is an area that warrants further empirical investigation.

The final sub-theme related to participants experience of reduced physical tension, as a result of mindfulness training. Importantly, Kabat-Zinn (1990) states that mindfulness programmes should not be considered as relaxation programmes, although relaxation can be a by-product. Across the focus groups, many children described mindfulness as "relaxing" or "calming". This may be reflect a subtle misunderstanding about the purpose of mindfulness although the terms "relaxation" and "calmness" are also more widely used and understood by children than "mediation" and may simply reflect a difference in vocabulary. As shown on the thematic map (Figure 3.6), reduction in physical tension was related to a reduction in

worry as well as a reduction in anger. In this study, it is therefore hypothesised that mindfully attending to negative emotions results in exposure and desensitization to them, which decreases intensity and promotes relaxation (Kabat-Zinn et al., 1994). Previous research has also shown that mindfulness can promote a sense of calmness and relaxation in children (Wall, 2005; Broderick & Metz, 2009).

3.5.1.7. Mechanisms of Change

RQ7 asked: How does mindfulness improve well-being i.e. what are the mechanisms of change? There has been growing research into mechanisms of change in adult populations (Baer, 2003; Shapiro, Carlson, Astin, & Freedman, 2006). This has been addressed to a lesser extent in studies involving children although it is possible that developmental level has an impact on how mindfulness is understood and applied. Hölzel et al. (2011) synthesised existing literature on mechanisms of change into a comprehensive theoretical framework for adults which is worthy of consideration. This framework highlights several components through which mindfulness meditation is considered to exert its effects:

- Attention regulation (e.g. sustaining attention on an object and when distracted, returning attention)
- Body awareness (e.g. focus on internal experiences such as breathing, emotions and sensations)
- Emotion regulation (e.g. noticing whatever is present in awareness and approaching emotions nonjudgmentally)
- Change in perspective on the self (e.g. distancing and detachment)

In this study, three mechanisms of change were identified: increased positive cognition; increased cognitive distancing and increased attention/awareness. There is some overlap between the mechanisms identified in the Hölzel et al. (2011) paper, namely attention regulation and body awareness. However, the children did not explicitly provide accounts of approaching emotions nonjudgmentally. Furthermore, the account of distancing provided by Hölzel et al. (2011) appears to be slightly more sophisticated that the account provided by the children in this study. Hölzel et al. (2011) describe a "disidentification from the static self of sense" as mechanism for change. However, it is also highlighted that the early stages of mindfulness practice can result in a "de-identification from some parts of mental content". For two children in this study, this was apparent as they reported being able to observe thoughts and feelings as passing events, rather than as valid reflections of reality. For the other children in the focus group, distancing involved being able to "let go" of negative automatic thought patterns which may reflect a less mature conceptualisation.

A striking difference in the mechanisms of change identified by children in this study and those reported by adults (Hölzel et al., 2011) relates to increased positive cognition. According to Kabat-Zinn (1994, p. 107), "if we decide to think positively, that may be useful, but it is not mediation". This is because mindfulness is based on observing, acknowledging and letting go of thoughts rather than engaging in further thought processes. It is possible however; that this finding can be explained using the States of Mind (SOM) model which argues that a balance of positive and negative thoughts is essential for psychological well-being (Schwartz and Caramoni, 1989). In

this study, it is possible that this cognitive balance was reached for certain children and hence, a reduction in negative affect (e.g. anger, worry and physical tension) meant an increase in positive affect. To the researcher's knowledge, this is the first study to explicitly consider mechanisms of change that are specific to children.

3.5.2 Strengths and Limitations of the Research

This study has a number of significant strengths**.** Firstly, it provides an initial evaluation of the Mindful Attention Programme (MAP) across state-funded primary schools in the UK. This is important for two reasons. Firstly, the MAP is a relatively new programme that is continuing to evolve. This study provides initial evidence that the MAP may have benefits for the mental health and well-being of children aged 9-10 years. Secondly, much of the current research on mindfulness in children has been conducted outside of the UK context or in private schools within the United Kingdom (Huppert & Johnson, 2010; (Sibinga et al. 2013**;** Van de Weijer-Bergsma Langenberg, Brandsma, Oort & Bögels, 2012). This provides evidence about the effectiveness of mindfulness programmes in a more relevant context.

This study also explored three areas of interest that have been neglected in previous studies. The first was the impact on mindfulness on negative automatic thoughts**.** Comparison of pre and post intervention scores on the CATS indicated that the MAP was not effective in reducing the frequency of negative automatic thoughts. However, the thematic analysis gave some indication that there were was a "reduction in worry" in children who showed the greatest change in anxiety from pre-test to post-test. The second area of interest was the relationship between home practice and therapeutic outcome. Whilst the study found no relationship between

home practice and therapeutic outcome, the content analysis provided some interesting suggestions about how home practice could be further facilitated. The final area of interest related to the mechanisms of change. Whilst this area has attracted attention in adult populations (see Hölzel et al., 2011), this is the first study to consider mechanisms of change that are specific to children.

This study is not without limitations. Firstly, self-report was the main source of data which may have resulted in children responding in a way that they perceived to be socially desirable (Crowne and Marlowe, 1960). In the qualitative strand of the research, the researcher attempted to limit the impact of this by emphasising that the children should speak freely and honest although the likely effectiveness of this is debateable. Whilst the decision to use solely self-report measures was based on practicalities, it should also be noted that self-report for internalizing problems (e.g. anxiety) is more accurate and reliable than parent or teacher reports (Logan & King, 2002). This suggests that further triangulation would not add much value.

A further limitation of this study relates to the lack of random assignment in conditions and the ethnic imbalance between the intervention and comparison groups. In this study, the Ofsted Data Dashboard (**http://dashboard.ofsted.gov.uk/**) was used to match children on demographic variables. However, this website does not provide ethnicity data which led to a discrepancy between the two groups (refer to Table 3.1 for further information). Whilst there is some evidence to suggest that ethnicity may have an impact on anxiety levels (Papay & Hedl, 1978), more recent research suggests that children from different ethnic groups demonstrate more similarities than differences among their fears and anxieties (Treadwell, Flannery-

Schroeder & Kendall, 1995). This suggests that the difference in demographic data was not significant in the context of the research. It should also be recognised that in school-based research, children are already nested within established class groups so on a practical level, random assignment by participant is not always possible.

Finally, this intervention was designed to be preventative in nature. As a result, children aged 9-10 years were selected to take part. This was based on research indicating that anxiety disorders are likely to first emerge at age 11 years olds (Kessler, Berglund, Demler, Jin, Merikangas & Walters 2005). Owing to time restrictions however, no follow-up data was collected on the anxiety levels of children (e.g. 6 months later) which makes it difficult to know whether the study had a preventative impact. This is a particular pertinent in light of research showing that effect sizes can actually increase from post-test to follow-up (Collins, Woolfson & Durkin, 2013; Essau, Conradt, Sasagawa & Ollendick, 2012; Mostert & Loxton, 2008). One hypothesis for this is that the follow-up period allows children to internalise the skills that they have been taught and employ the new techniques.

3.5.3 Recommendations for Future Research

Further evaluation studies are required before the MAP can be confidently used as an intervention option. This is particularly pertinent given that the findings for measures of anxiety and negative thoughts were very close to significance ($p = 0.052$ and $p = 0.055$, respectively). Based on the findings from the thematic analysis, it is also recommended that a wider battery of questionnaires are used – particularly those that may tap into externalising difficulties. This could include measures such as the Child

Behaviour Checklist (CBCL), Behaviour Rating Inventory of Executive Functioning (BRIEF) or the Strengths and Difficulties Questionnaire (SDQ).

This study provided some preliminary themes in relation to the mechanisms of the change and highlighted developmental differences between adult and child populations. It is essential that researchers continue to explore mechanisms of change that are specific to children. This is because it can "inform the scientific understanding of the processes leading to therapeutic change, help therapists and treatment developers improve outcomes and refine treatment manuals" (van der Velden et al. 2015, p.34).

As a final point, future research may wish to continue exploring whether home practice has an enhancing effect on outcomes. This will require important considerations regarding how to collect accurate and reliable data. This is because when children are asked to self-report on the amount that they practised at home, there is the potential for them to respond in a way that they perceive to be socially desirable (i.e. reporting that they had completed more/less home practice, depending on their audience). To reduce some of these potential threats to reliability, future research may wish to consider whether the use of technology could be helpful in recording the duration of home practice each evening. As suggested above, children may also benefit from additional opportunities to practise within the school. This would help to ensure that all children have equal access to practice opportunities. There may also need to be a greater emphasis on engaging parents in the process. This is particularly pertinent for young children as when "parents support the child's

mindfulness practice outside therapy, benefits are likely enhanced" (Semple & Lee, 2007, p.63).

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Chapter 4: Dissemination and Impact

4.1 Introduction

This chapter will consider the concepts of evidence-based practice (knowledge transfer) and practice-based research. It will explore ways in which this study extends the knowledge base in mindfulness as well as the economic, societal and academic beneficiaries of the research. Finally, this chapter will consider the strategy for disseminating the research.

4.2 Concepts of Knowledge Transfer

4.2.1 Evidence-based practice

Evidence-based practice (EBP) is a process that involves "the conscientious, explicit, judicious use of current best evidence in making decisions about the care of individual patients" (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996, p. 71). It should be noted that in educational psychology (EP) practice, the term "patient" would not be used but would refer to any child or family member receiving psychological services. Whilst evidence-based practice has become a popular trend in psychology, the EBP movement only began 20 years ago (Sackett et al. 1996). Between 1990 and 1995, there were "virtually no citations in Medline or PsycINFO on EBP" (American Psychological Association Task Force on Evidence-Based Practice for Children and Adolescents, 2008, p. 20) whilst by 2006, there were some 271 references related to EBP with children and adolescents (Frick, 2007). This suggests that the EBP movement quickly developed momentum, with psychologists taking a more scientifically minded approach to assessment and intervention.

Evidence-based practice is often conceptualised as a "three-legged stool" (Spring, 2007). Specifically, evidence-based practice attempts to integrate: (1) the best available evidence with (2) professional judgement and expertise and (3) child characteristics/preferences. In the literature, there is much debate on the weight that is given to each leg of the "three-legged stool". Some have argued that all three legs of the stool should be given equal weighting when making decisions about how to support a particular child or family (Levant, 2004). More recently, it has been argued that the best available research evidence should be given priority over the other two legs of the stool (American Psychological Association Presidential Task Force on Evidence-Based Practice, 2006).

When considering the best available evidence, the hierarchy of evidence is often used (see Figure 4.1). This ranks research methodologies in order of their validity (Evans, 2003). Within this hierarchy of evidence, the randomised controlled trial (RCT) is often considered the "gold standard" methodology. This is because RCTs are able to control for other factors which may confound the outcome of a study and either underestimate or overestimate the actual effect of the intervention (Akobeng, 2005). This is typically achieved through randomization, manualised intervention programmes, a control condition and specific inclusion/exclusion criteria. As can be seen in Figure 4.1, systematic reviews are placed slightly higher on the hierarchy. This is because pooling data from a number of individual RCTs increases the number of participants as well as the overall strength of the analysis (Akobeng, 2005). When considering the "best available evidence", practitioners will often refer to such reviews. This is because they provide evidence that certain actions, performed in a particular way, are likely to produce predictable results (Cournoyer & Powers, 2002).

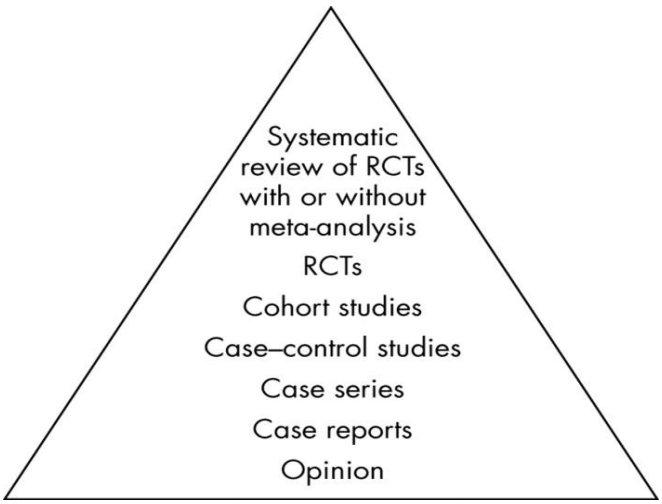

Figure 4.1. Hierarchy of evidence (taken directly from Akobeng, 2005)

Whilst the use of evidence-based practice has improved outcomes for children and young people (Odom, 2009), there are many challenges with the implementation of this approach. One major challenge in the implementation of EBP is the size and complexity of the evidence base which can make it difficult for professionals to access and interpret (Ramchandani, Joughlin & Zwi, 2001). In support, Fox (2003) found that many EPs can "feel intimidated by research design and statistical analysis" and unable to "recognise good research" (p.95). To support psychologists in making decisions about the quality of research evidence, a number of helpful organisations exist such as Evidence-Based Education UK, What Works Clearing House and the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre). The role of these organisations is to systematically review research evidence and publish the findings in a way that is accessible for professionals. One could argue however, that practising psychologists also need the skills to locate, appraise and synthesise the available research evidence (McHugh & Barlow, 2012). This has clear implications for the training of psychologists as well as continued professional development opportunities, particularly given the finding that

practitioners who receive input on the process of EBP are more likely and more skilled in undertaking EBP-related activity (Fritsche, Greenhalgh, Falck-Ytter, Neumayer & Kunz, 2002).

Another challenge with the implementation of EBP is ensuring that this approach is "person centered". Whilst the RCT is often considered as the "gold standard" methodology, many psychologists have argued that RCTs are based on the wrong assumption – that "one size fits all" (Fox, 2011; McHugh & Barlow, 2012). Clearly, psychologists must also be able to apply research findings in light of other factors such as child characteristics, family circumstances and school context before assuming suitability. Furthermore, there are a number of structural and contextual factors that can affect the adoption, implementation and sustainability of evidence-based interventions within "real world" settings such as a school (Fixsen, Naoom, Blasé, Friedman & Wallace, 2005). In a school context, research has shown that facilitating factors include support from school leadership, the opportunity for regular support or coaching to reinforce new skills and integration of the intervention with other aspects of the school curriculum. On the other hand, barriers to implementation include time, competing pressures as well as the attitudes/beliefs of school personal who are delivering the intervention (Forman, Olin, Hoagwood, Crowe & Sake, 2009; Kratochwill et al. 2012). One could argue that EPs are well-placed to work with these factors – highlighting a need for practice-based evidence.

4.2.2 Practice-based research

Practice-based evidence involves practitioners conducting research and sharing these findings with the research community as part of the routine delivery of academic and mental health interventions (Newman, Kellett, & Beail, 2003; Kratochwill et al. 2012). Rather than a study of efficacy (i.e. evaluating interventions in a controlled way such as an RCT), practice-based evidence is based on effectiveness (i.e. evaluating interventions in a practice context). This enables practitioners to answer essential questions about whether the findings from an RCT are generalizable to the "real world" context (e.g. school settings and classrooms). Furthermore, practice-based evidence enables practitioners to consider factors such as intervention acceptability, *who* the intervention works for and in some cases, *why* the intervention doesn't work. By conducting research and sharing the findings with the research community, a bridge between research and practice is also formed. In this sense, one could argue that a complementary and cyclical relationship exists between EBP and practice-based evidence (Barkham & Mellor-Clark, 2003). This is shown in Figure 4.2.

One might argue that EPs are well-placed to deliver evidence-based interventions and evaluate the effectiveness of these within the school context, thereby developing practice-based evidence (Fox, 2011). This is consistent with the "scientist-practitioner model" which is founded on the idea that psychologists should be able to practice in their chosen field as well as conducting relevant research (Barker, Pistrang & Elliot 2002; Jones &Mehr, 2007). Fox, Martin and Green (2007) argue that it is unacceptable to argue that there is no point in researching practice unless

one is involved in an RCT. This is because practice-based research becomes a way of contributing to the growing knowledge base, influencing practice and in some circumstances, examining professional expertise.

This study was a piece of practice-based research, which evaluated the impact of a mindfulness intervention in a school context. Given the mixed methods focus of this research, it is difficult to place this research on the hierarchy of evidence (see Figure 4.1). This is one of the fundamental flaws with the hierarchy, which is widely accepted in the medical literature, but not always appropriate for psychological research. As argued by Stern, Stame, Mayne, Forss, Davies and Befani (2012), different designs are more or less appropriate for different research questions. It has also been argued that some of the most persuasive and powerful evidence is produced when a range of methods are "mixed" together (Department for International Development, 2013). One could also argue that hierarchies based on study design pay "insufficient attention to the need to understand what works, for whom, in what circumstances and why" (Nutley, Powell & Davies, 2012, p.8). This is often a key feature of psychological research and helps to ascertain the necessary support factors required for a particular causal relationship to hold in a given context (Cartwright, 2013). The current research took this approach and helped to answer many questions related to the necessary support factors. As highlighted in Figure 4.2, this research has the potential to influence future research and feed into a cyclical and complementary relationship with EBP. The implications of this research for academic and professional practice are discussed in the next chapter.

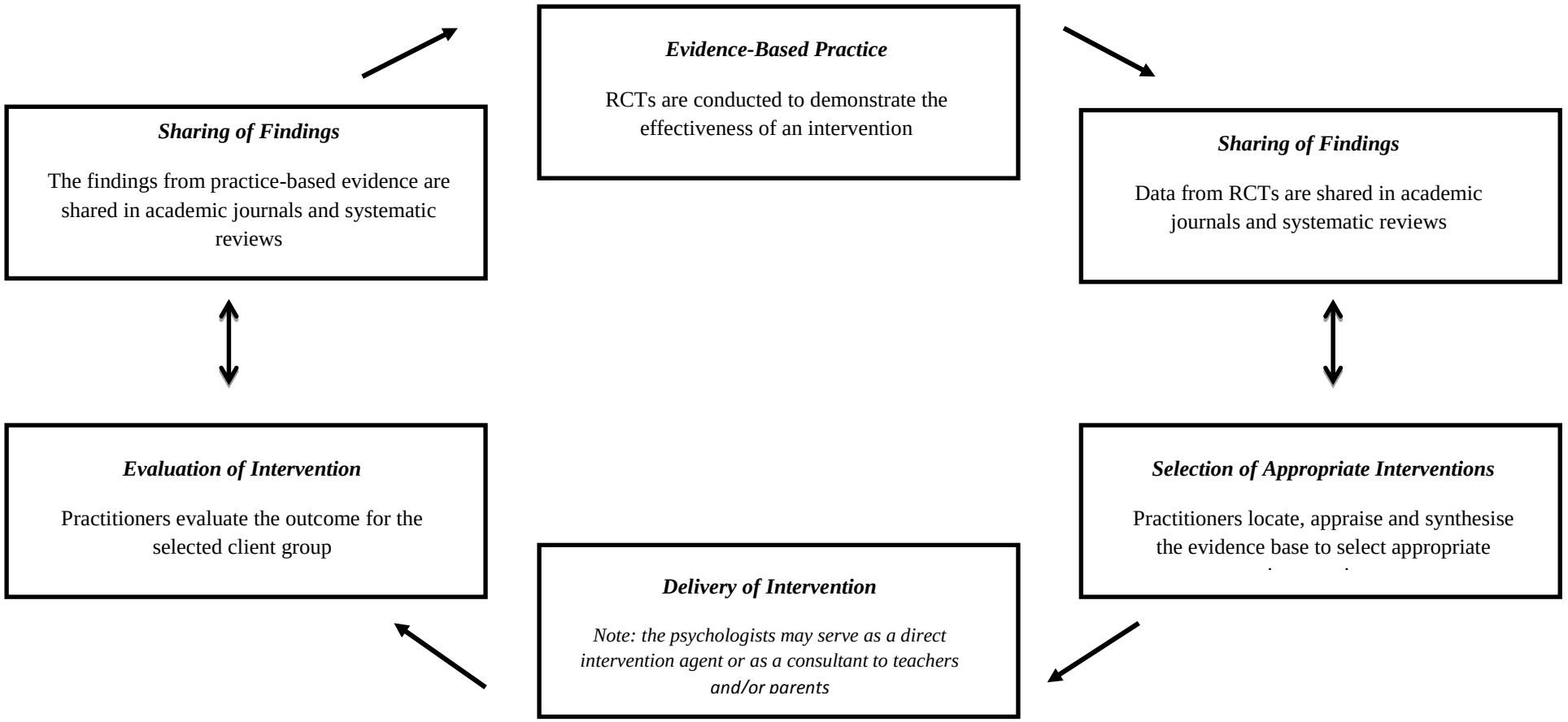

Figure 4.2. The cyclical relationship between EBP and practice-based evidence

4.3 Implications of this Research

This section will consider the academic implications of the research as well as the professional implications for EP practice.

4.3.1 Academic Implications

This research used an explanatory sequential mixed-methods design to answer the research questions (Creswell, Plano Clark, Gutmann & Hanson, 2003). This is a two-phase approach and involves the researcher conducting a quantitative phase and then following up on specific findings with a qualitative phase. Some researchers have raised concern that mixed methods designs place qualitative methods as secondary to quantitative methods (Yin, 2006). However, this research highlights that the two methods can have equal value and be integrated in a way that promotes the unique strengths of each approach. Unfortunately however, this methodology is not widely cited in research articles. In 2008, Powell, Mihalas, Onwuegbuzie, Suldo and Daley analysed the research methodologies used in four journals from the field of school psychology across a 5-year period. It was found that the majority of articles used quantitative methodologies whilst only six studies published in the 5-year period used purely qualitative methodologies. This highlights a clear publication bias for quantitative designs – presumably based on their robustness, greater generalisability and methods to minimise bias. Across the 5-year period, 13.7% of articles were classified as using a mixed methods design which is incredibly low. The authors conclude that "this proportion is scant; bearing in mind the conceptual and methodological appeal of mixed methods research" (p. 306).

Greene (2007, p. xiii) argues that a mixed method design helps to "compensate for inherent method weaknesses, capitalize on inherent method strengths, and offset inevitable method biases" which can lead to a more robust analysis. In this particular study, there were three main benefits of using a mixed-methods design. Firstly, this design enabled the researcher to further explore surprising results. For example, this study found no relationship between home practice and therapeutic outcome, which contradicts previous research (Carmody & Baer, 2008; Huppert & Johnson, 2010). As a result, the children were asked about difficulties with home practice as well as ways that home practice could be facilitated further. This was analysed by content analysis and promoted some interesting discussion about how younger children may require much greater adult support if their attempts at home practice are to be successful. In this study, the second benefit of using a mixed methods design was that the quantitative data (e.g. scores on measures such as the SCAS) could be used to select participants for the focus groups. This research was interested in exploring mechanisms of change (i.e. *how* does mindfulness work). To ensure that children could answer these questions, those who had shown the greatest change in anxiety score from pre-test to post-test were selected for the focus group. By using these participants, preliminary themes in relation to the mechanisms of the change were highlighted. A final benefit of the mixed-methods design for this study was that the qualitative aspect helped to explore the children's views in more depth (Creswell, Plano Clark, Gutmann & Hanson, 2003). From an EP perspective, this is considered to be highly desirable given that much of our professional practice involves taking the views, wishes and feelings of the child or young person into account (SEN Code of Practice, 2014). Previous research has also highlighted that young people have

much to offer to researchers through their ability to provide valuable insight into their experience (O'Connor, Hodkinson, Burton & Torstensson, 2011).

A further academic benefit of this research is related to the contribution that it makes to a growing field. In this study, it was found that the MAP did not have a significant effect on anxiety scores ($p = 0.052$) or negative thoughts ($p = 0.055$). Whilst there was evidence of differences between the two groups (intervention and comparison), this evidence was not quite strong enough to meet the conventional standard of $p<.05$. Whilst this result may be somewhat disappointing, researchers have argued that this lack of statistical significance is not "uninformative" or "unworthy of publication" (Levine, 2013, p. 270). According to Levine (2013), it is important for both significant and non-significant results to feature in publications to ensure that the scientific literature does not become distorted or biased. This is particularly important for the purpose of meta-analyses, which seek to synthesise results from a number of different studies and assess the overall effectiveness of a particular intervention (Glass, 1976). As shown in Figure 4.1, systematic reviews are placed at the top of the evidence hierarchy. However, the validity of this methodology can be threatened if the studies retrieved for review are represented by a fundamental bias towards statistically significant results. Given that systematic reviews promote a more objective appraisal of the evidence and are widely accepted as a preferred methodology, such threats to validity must be taken seriously (Rothstein, Sutton & Borenstein, 2006). By publishing the findings of this study, it is hoped that the data can be entered into a meta-analysis and hence, give a more balanced view of the impact of mindfulness for children and young people. It is also important to note that whilst this research found non-significant results, the effect sizes were somewhat

comparable to other research. This may suggest some practical significance of the results.

As part of a meta-analysis, one might also expect to see a discussion about the different mindfulness-based programmes that are available for children and young people. By sharing the findings of this research with the academic community, there may also be an opportunity for the MAP to be compared and contrasted with other programmes that exist such as MindUp (Lawlor & Willis, 2009), Learning to BREATHE (L2B; Broderick, 2013) and .b (Mindfulness in Schools Project). Indeed, the MAP has many advantages over these programmes. Firstly, MindUp and L2B are designed for children in the United States. As a result, the language and resources used may not be appropriate in a UK context. Furthermore, the .b programme requires adults to attend a four-day teacher training course which has time and cost implications. The MAP may therefore be an attractive intervention option for teachers, psychologists or other professionals working within a school context. Whilst the MAP recommends that programme facilitators have developed their own mindfulness practice, the actual intervention is currently delivered by closely following the handbook/associated slides and does not yet involve specific training.

In the adult literature, the importance of examining change mechanisms is well-recognised (Baer, 2003; Shapiro, Carlson, Astin, & Freedman, 2006). This is because it can "inform the scientific understanding of the processes leading to therapeutic change, help therapists and treatment developers improve outcomes and refine treatment manuals" (van der Velden et al. 2015, p.34). To the researcher's

knowledge, this is the first study to explicitly consider mechanisms of change that are specific to children. Through the cyclical process described in Figure 4.2, one of the academic beneficiaries of this research could be using the findings to inform future RCTs. More specifically, the components of mindfulness that appear to be linked to therapeutic change (e.g. attention/awareness, positive cognition, cognitive distancing) could be enhanced. By comparing the results of the original programme to the results with the enhanced components, there may be a better understanding of how the effect occurs (Kraemer, Wilson, Faiburn, Agras, 2002).

Finally, previous research has shown that home practice can have enhancing effects on outcomes for adolescents (Huppert & Johnson, 2010) and adults (Carmody and Baer 2008). This study did not find such an effect, which may suggest that there are developmental differences with regard to the benefits of home practice. This has two key implications for future research. Firstly, it is recommended that data regarding the benefits of home practice is routine collected in research. This will help to further explore the findings from this study and make decisions about the utility of home practice for younger children. Secondly, the data from the content analysis suggested that access to a quiet space would make home practice easier (a response given by 23% of children). By involving parents in this process, greater priority may be given to practising mindfulness at home. To date, very few universal programmes have included a parent component. One of the main reasons for this is that it is notoriously difficult to ensure attendance at workshops or parents' evenings. Furthermore, it is often argued that parents of students most "at-risk" will be least likely to attend (Spence & Short, 2007). In future research, it may be helpful to consider was to maximise parental participation and measure the impact that this has on outcomes.

4.3.2 Professional Implications

Whilst some of the professional implications of this research are discussed in Chapter 3, this section aims to provide greater detail with regard to the implications for EP practice. The SEN Code of Practice (2014) now includes "social, emotional and *mental health*" within the 4 categories of SEN suggesting that mental health is part of the EP remit. Given the current demand on Child and Adolescent Mental Health Services (CAMHS), there is also increasing interest in the EP as a therapeutic provider (MacKay, 2007). As the mindfulness literature continues to document positive effects on the mental health and well-being of children (Weare, 2012), it is striking to note that EPs rarely feature as programme facilitators. The results of this study are promising, but require replication. It is therefore recommended that EPs consider delivering the MAP as part of their service delivery to schools and use a wider range of measures to capture possible change. This could include measures such as the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) which has been shown to be sensitive to change over time and therefore suitable for the purpose of measuring the impact of an intervention (Mason, Chmelka & Thompson, 2012).

In this study, a universal design was used to deliver the programme. However, the results showed that this mode of delivery was not effective in reaching children with clinical levels of anxiety. This finding has also been reported within the literature, with researchers stating that universal programmes may not be sufficiently focused on the specific needs of children who are highly symptomatic (Stallard et al. 2012). Furthermore, it is hypothesised that children who are highly symptomatic may not feel comfortable in sharing their experiences of anxiety among a sample of children

who are unlikely to have similar symptoms – thereby affecting effectiveness. It may therefore be beneficial for EPs to compare and contrast the effectiveness of different modes of delivery and hence, further contribute to a growing knowledge base about what works and for whom (Fonagy, Cottrell, Phillips, Bevington, Glaser & Allison, 2014).

This research found that teachers were relatively poor at identifying children with anxiety, a finding that is consistent with previous research **(**Kendall & Flannery-Schroeder, 1998; Headley & Campbell, 2011). Given the long-term impact of anxiety disorders on concentration (Ma, 1999), academic achievement (McGee & Stanton, 1990), peer relationships (Strauss, Frame & Forehand, 1987) and school absenteeism (Last & Strauss, 1990; King & Bernstein), it is essential that children with internalising disorders can be identified early. However, research suggests that children with internalizing problems are frequently overlooked in schools because their behaviors fit the profile of an ideal pupil: docile, quiet, and compliant (Gresham & Lopez, 1996). Reports from teachers also suggest that they often feel inadequately prepared to recognise and support children with mental health concerns (Moor et al. 2000; Rothi, Leavey & Best, 2008). One of the practice implications of this research is therefore to share this finding with schools and educational psychology services so that discussions about how to improve teacher's ability to recognise children with internalising problems can occur. This could include training opportunities which have been shown to support the identification process (Moor et al. 2000).

4.4 Dissemination of the Research

4.4.1 Pathways to Impact

Lomas (1993) describes three pathways to impact: diffusion, dissemination and implementation. Diffusion is described as the "passive, untargeted, unplanned and uncontrolled spread of new interventions" (Rabin, Brownson, Haire-Joshu, Kreuter & Weaver, 2008, p.118). This could include, for example, availability of the programme manual for purchase or a presentation at a professional conference which professionals would self-select to attend (McHugh & Barlow, 2012). According to Lomas (1993), this form of communication tends to work well when the recipients are already open to hearing about the research and are already highly motivated or willing to invest. Dissemination, on the other hand, is a more active process. It has been defined as a "planned process that involves consideration of target audiences and the settings in which research findings are to be received" (Wilson, Petticrew, Calnan & Nazareth, 2010). To be done effectively, dissemination also requires an understanding of the factors that lead to widespread use of an intervention as well as the potential barriers (Rabin, Brownson, Haire-Joshu, Kreuter & Weaver, 2008). These are discussed below. Finally, implementation refers to the wider effect of the research on service delivery or policy which typically takes time to occur (Dunsmuir & Kratochwill, 2013; Lomas, 1993).

According to Brown (1995), there are a number of factors that influence whether empirical evidence will be used to inform practice. This includes:

1. Relevance (i.e. the extent to which the findings fit with the particular needs of the reader)
2. Clarity (i.e. whether the information is clear and accessible to readers)
3. Acceptability (i.e. the degree to which the intervention is desirable to key stakeholders)
4. Replicability (i.e. the extent to which the intervention can produce predictable results)
5. Credibility (i.e. the credentials of the person writing about the intervention)
6. Timeliness (i.e. whether discussion about the proposed benefits of the intervention has occurred at a time when it can be used to effect change).

Clearly, the pathway to impact is complex, with a clear dissemination strategy being an essential starting point. The next section will explore the dissemination strategy for this research with regard to academic journals, research conferences and non-academic publications. Given the large amount of data collected in this doctoral thesis, a number of different recommendations are made regarding which information is to be shared with whom.

4.4.2 Academic Journals

One "pathway to impact" is for researchers to publish in academic journals. As highlighted by Barker, Pistrang and Elliot (2002, p. 241), it is important to "identify the journal that you are aiming for, as different journals have different requirements, both in terms of content and style. The anticipated readership of the journal will partly determine what material to include and how to present it". For this research,

the content of the publication, authorship and the proposed target audience of the journal were taken into consideration.

Content. Belcher (2009) argues that a lack of argument is one of the main reasons that journal articles are rejected. Owing to the large amount of data collected in the empirical paper, two separate papers are proposed with two separate arguments. A third paper, based on the systemic literature review, is also proposed. For the abstracts of these proposed papers, see appendix Q.

Paper 1. This paper will have a mixed method focus and include the empirical findings as well as the data from the content analysis about home practice. The main argument for this paper would be that developmental level appears to have an impact on whether home practice is beneficial. An argument will also be made for others to replicate the MAP so that potential benefits can be further explored.

Paper 2. This paper will include the thematic analysis which explores reported change as well as preliminary themes in relation to the mechanisms of the change. The main argument for this paper would be that developmental level has an impact on how mindfulness is understood and applied. This is because the mechanisms of change identified in this study appear to be different to the mechanisms of change identified in adult populations (Hölzel et al. 2011). As discussed above, an understanding of the mechanisms of change can inform scientific understanding and lead to important refinements of mindfulness programmes (van der Velden et al. 2015). Given that this appears to be the first study that has considered mechanisms of

change in children, this research is likely to be of interest to the mindfulness community**.**

Paper 3. This paper will include a summary of the systematic literature review. This review was a novel piece of work for two reasons: (1) it is the first systematic review to explicitly explore the effectiveness of universal cognitive-behavioural approaches on anxiety and (2) it makes a unique case for mindfulness to be described as a "third wave" cognitive-behavioural intervention. For these reasons, the review paper is likely to be of interest to mental health practitioners and psychologists alike.

Authorship. To be listed as an author, an individual should have made a substantial scientific contribution to the formulation or design of the paper (American Psychological Association, 1992; Fine & Kurdek, 1993; Koocher & Keith-Spiegel, 1998). It is also argued that the order of authorship should reflect each person's contribution (Barker, Pistrang & Elliot, 2002). For the papers outlined above, it is proposed that the lead researcher will be the first listed author and the research supervisor will be the second listed author. Whilst the development of the thesis has felt like a joint process, the lead researcher has been responsible for the conducting the systematic literature review, implementing the research design and writing the chapters of the thesis and hence, has made a larger contribution. One could argue that the programme facilitator (i.e. the author of the MAP) should be considered for authorship of the first two papers. However, an independent evaluation of the MAP may be considered more appropriate. Whilst the author of the MAP played a critical role in facilitating the programme, one could also argue that the author of the MAP did not play a role in the writing the manuscript or designing the study.

Proposed Target Audience. For all of the proposed papers, the target audience would be psychologists, mental health workers or mindfulness practitioners. For Paper 1, the target audience would also include academics or PhD students with an interest in this field. Given the recommendations around replication, these people are more likely to have the resources (and time) to re-evaluate the MAP. For Paper 2, the target audience would also include programme developers. This is because an understanding of the mechanisms of change (i.e. processes that lead to therapeutic change) may encourage programme developers to consider refining their manuals and enhancing particular aspects of the programme (van der Velden et al. 2015). Finally, the target audience for Paper 3 could include policy makers within local authorities or perhaps, more widely.

To ensure that the proposed papers reach the proposed target audience, the impact factor of relevant journals was explored. The impact factor refers to the frequency with which the average article in that journal has been cited elsewhere, in a particular year (Lichtfouse, 2013). This provided a starting point for looking at journals in greater detail. As suggested by Pollard (2005, p. 4), it is also important to "locate each of the journal's "instructions to authors" document" as this contains information about "lists of topics that are welcomed or discouraged, information on page limits, and descriptions of the different types of manuscripts it welcomes". For a list of possible journals and their relevant characteristics, see appendix R. For Paper 1, the following three journals are shortlisted and discussed in greater length:

1. *Mindfulness* – This journal has an impact factor of 3.692 which is relatively high given that it is isolated to one area. The benefit of this however, is that professionals reading the journal are likely to have a profound interest in mindfulness and associated concepts. The journal also reports that they welcome submissions on "clinical uses of mindfulness in psychological distress" and cite the treatment of "childhood anxiety and depression" as an example topic. This ties in nicely to the proposed content of paper 1.
2. *British Journal of Educational Psychology* - This journal has an impact factor of 2.00 which is relatively high given that it targets one specific division of psychology. The benefit of this however, is that EPs reading the paper may be able to negotiate the delivery of the MAP as part of their service provided to schools. Similarly, it may target doctoral students with an interest in this area and lead to a possible re-evaluation of the MAP. Importantly, this journal recognises that they "publish more quantitative than qualitative studies" which ties into the main content of paper 1.
3. *School Psychology International* – This journal has an impact factor of 1.447. It targets those who provide "mental health, educational, therapeutic and support services to schools and their communities throughout the world" which is highly relevant given the focus on replication and developmental differences in the benefits of home practice when working with younger children.

As described above, a second paper is also proposed which will describe the reported change from the perspective of the children (e.g. reduction in worry, reduction in anger and reduction in physical tension) as well as the mechanisms of change

identified through the thematic analysis. For a list of possible journals and their relevant characteristics, see appendix R. The following three journals were shortlisted for submission for Paper 2 and are discussed in greater length:

1. *Mindfulness* - As described above, this journal has a relatively high impact factor of 3.692. Importantly, the journal reports that they welcome submissions based on the "mechanisms of actions" which is directly linked to the proposed content of paper 2.
2. *Qualitative Research* – This journal has an impact factor of 1.909. Whilst this journal is not specific to education, it is most likely to welcome a focus on qualitative methods and hence, the proposed content of paper 2.
3. International Journal of Qualitative Studies in Education – This journal has an impact factor of 0.533. It is an international journal which means that discussion about the mechanisms of change can occur on an international level, as opposed to just the UK. It also has a focus on a "variety of qualitative methods and approaches" which will include thematic analysis.

Paper 3 would aim to outline the findings from the systematic literature review. For a full list of possible journals and their relevant characteristics, see appendix R. The following three journals were shortlisted for submission and are discussed in greater detail:

1. *Educational Psychology Review* – This journal has an impact factor of 2.565 which is relatively high given that it targets a specific division of psychology.

The main reason that this journal was shortlisted is because it is primarily interested in "review articles" and "special thematic issues" which ties into the main content of paper 3. This may increase acceptability.

2. *Journal of Anxiety Disorders* – This journal has an impact factor of 2.594. Whilst this journal tends to accept empirical papers, it occasionally accepts review articles that "contribute substantially to current knowledge in the field". Given that paper 3 is the first review of universal cognitive-behavioural approaches, one could argue that this would make a unique contribution to the literature. The high impact factor also means that the journal is more likely to influence practice and perhaps, policy.
3. *Journal of Child and Family Studies* – This journal has an impact factor of 1.161. The journal aims to publish "topical issues pertaining to the mental well-being of children, adolescents, and their families" which is relevant to the proposed content of paper 3. It should also be noted that this journal has published a decent amount of research in mindfulness (see Burke, 2010), as well as reviews on school-based interventions for mental health (Hoagwood & Erwin, 1997) which may suggest that this is an area that the editors are interested in.

Whilst it is recognised that academic publications may be the best route for dissemination, there is some evidence to suggest that policy makers are selective in the research that they cite (Lindblom and Cohen, 1979). As a result, it may be beneficial to share the published manuscript(s) directly with influential groups such as the Mindfulness All-Party Parliamentary Group. This group was set up to review scientific evidence in mindfulness training and develop policy recommendations for

the Government. This may support the "implementation" (Lomas, 1993) of particular findings.

Timeline. Over the last decade, the number of publications in mindfulness has steadily increased (Weare, 2012). As a growing area of interest, it is important that this research is disseminated in a timely manner so that it remains current and promotes further interest and research. This also ties into the factors identified by Brown (1995), namely timeliness and relevance, which influence whether findings will be used to inform practice. As shown in Table 4.1, it is hoped that the proposed papers will be submitted to the relevant journals by September 2016.

Table 4.1

Proposed timeline for publication in academic journal

Activity	Start Date	Approximate duration
Conduct literature search to ensure that the proposed papers are still "novel" and would make a "unique contribution to the field"	June 2016	1 day
Discuss proposed papers with thesis tutor	June 2016	1 day
Draft proposed paper(s)	July 2016	6 days
Ask thesis tutor for feedback on proposed paper(s)	July 2016	2 days
Make revisions on proposed paper(s)	August 2016	4 days
Ask thesis tutor for feedback on proposed paper(s)	September 2016	2 days
Submit proposed paper(s) to chosen journals and await feedback	October 2016	-

4.4.3 Research Conferences

One way of bridging the gap between research and practice is for practitioners to disseminate in outlets other than scientific journals (Barlow, 1994). One example is poster presentations which aim to provide a brief overview of the research and its implications for practice (Berg, 2005). Within the literature, there has been some debate as to whether poster presentations are an effective means of dissemination (Duchin & Sherwood, 1990; Taggert & Arslanian, 2000; Rowe & Ilic, 2009). Some have argued that posters often have tremendous visual appeal, but lack depth and content (Berg, 2005). In support, Rowe and Ilic (2009) found that it the visual appeal of the poster, rather than the subject content, that often draws professionals to particular posters and subsequently engages them. Unfortunately, this means that

posters are not always judged for their scientific contribution, succinct message or originality and may mean that poster presentations are not an effective means of dissemination. However, there is some evidence that supplementing poster presentations with some form of oral presentation can enhance knowledge dissemination (Berg, 2005). In a study by Rowe and Ilic (2009) which utilised an online survey, 76% of participants believed that authors should stand with their poster so that supplementary oral presentations could be given and questions answered. This is a more interactive and engaging method than a "traditional" poster presentation where the information provided on the poster must be sufficient alone.

Each year, the British Psychological Society (BPS) organise a Doctorate in Educational and Child Psychology (DECP) Trainee Event. This event provides an opportunity for trainees to disseminate research findings to those who are currently in training and may be considering research proposals. This is typically achieved through a poster presentation. Given that this research used a mixed methods design, this would be a good opportunity to stimulate interest in this methodology. As a result, it is proposed that the most striking results from both the qualitative and quantitative strands of the research are included on the poster presentation. See appendix S for a draft proposal.

Whilst the strengths of a mixed method approach have been described in section 4.3.1, the DECP Trainee Event may also raise questions about the challenges of employing this methodology. In this research, the time required to implement two phases was the biggest challenge. Whilst the qualitative phase had been tentatively

considered at the start of the research, the quantitative results had to be analysed before the focus group transcript could be finalised. This is because the purpose of an explanatory sequential design is to use the qualitative strand to further explore significant (or nonsignificant) results as well as the reason behind the resultant trends (Creswell, Plano Clark, Gutmann & Hanson, 2003). As a result, the data was analysed during the Spring Term so that the focus groups could be conducted in the Summer Term which was a time-pressured activity. A further challenge was deciding on the criteria for selecting participants for the qualitative strand. Initially, random sampling had been proposed although this was later amended to purposive sampling so that participants who had responded positively to the intervention (i.e. shown the largest change in anxiety from pre-test to post-test) could be selected. It was hypothesised that these children might have been better able to answer questions about mechanisms of change (i.e. *how* does mindfulness work) which was an area of interest from the outset.

4.4.4 Non-Academic Publications

The final dissemination strategy relates to non-academic publications such as magazines. For this piece of research, it is proposed that an article is written for the SEN magazine or Teach Primary (a leading magazine for primary educators). In this article, an alternative argument would be constructed about the prevalence of internalising disorders in the classroom and the impact of this on academic achievement. This would be supported by citing the percentage of children in this study that met the clinical cut-off for anxiety and comparing this with statistics that are published elsewhere (Costello, Mustillo, Erkanli, Keeler & Angold, 2003). With the World Health Organisation (WHO) predicting that internalizing disorders will be

the leading cause of illness among children and adolescents by 2020 (World Health Organization, 2012), the need for early identification is critical. However, this research highlighted that teachers are relatively poor at identifying children with potentially clinical levels of anxiety. This claim would be supported by the data collected at pre-test from teachers (e.g. using the teacher rating question) and comparing this to the data collected from the children (e.g. using the SCAS, with 42.48 as a clinical cut off). As a form of psychoeducation, this magazine article could promote discussion about the signs and symptoms of anxiety. Finally, this article could promote the MAP as one response to the rise in internalising disorders among children. If delivered by an outside source (e.g. EPs) the MAP may also, inadvertently, provide teachers with an opportunity to develop their own mindfulness practice. This is particularly important given the role that teachers can play in modelling and embodying the particular qualities that mindfulness develops such as openness, flexibility and non-judgement (Iyadurai, Morris & Dunsmuir, 2014). It should be noted that the timeline for dissemination in the proposed magazines is the same as the timeline included in Table 4.1.

4.5 Conclusions

To conclude, this doctoral thesis has made a unique contribution to a growing area of research. Whilst it could still be argued that enthusiasm about mindfulness supersedes the evidence (Greenberg & Harris, 2012), the dissemination of this research would help to fill a number of gaps that exist within the literature and help to contribute towards discussions about whether mindfulness is an appropriate intervention for children with internalising mental health difficulties.

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Appendices

A. Studies Excluded Based on a Full-text Analysis

Reference	Reason for exclusion
Ahlen, J., Breitholtz, E., Barrett, P. M., & Gallegos, J. (2012). School-based prevention of anxiety and depression: a pilot study in Sweden. *Advances in School Mental Health Promotion*, *5*(4), 246-257.	**7.** No control group
Barrett, P. M., Sonderegger, R., & Xenos, S. (2003). Using FRIENDS to combat anxiety and adjustment problems among young migrants to Australia: A national trial. *Clinical Child Psychology and Psychiatry*, *8*(2), 241-260.	**10**. The programme is indicated
Barrett, P. M., & Pahl, K. M. (2006). School-Based Intervention: Examining a Universal Approach to Anxiety Management. *Australian Journal of Guidance and Counselling*, *16*(1), 55-75.	**2.** Study does not collect empirical data – review paper
Bernstein, G. A., Bernat, D. H., Victor, A. M., & Layne, A. E. (2008). School-based interventions for anxious children: 3-, 6-, and 12-month follow-ups. *Journal of the American Academy of Child & Adolescent Psychiatry*, *47*(9), 1039-1047	**10**. The programme is selective
Bothe, D. A., Grignon, J. B., & Olness, K. N. (2014). The Effects of a Stress Management Intervention in Elementary School Children. *Journal of Developmental & Behavioral Pediatrics*, *35*(1), 62-67.	**9.** The programme is not CBT or mindfulness
Britton, W. B., Lepp, N. E., Niles, H. F., Rocha, T., Fisher, N. E., & Gold, J. S. (2014). A randomized controlled pilot trial of classroom-based mindfulness meditation compared to an active control condition in sixth-grade children. *Journal of school psychology*, *52*(3), 263-278.	**12.** The programme is targeted at well-being generally
Bru, L., Solholm, R., & Idsoe, T. (2013). Participants' experiences of an early cognitive behavioural intervention for adolescents with symptoms of depression. *Emotional and Behavioural Difficulties*, *18*(1), 24-43.	**6.** Qualitative study- no quantitative measures of anxiety
Challen, A. R., Machin, S. J., & Gillham, J. E. (2014). The	**12.** The intervention is

UK Resilience Programme: A school-based universal nonrandomized pragmatic controlled trial. *Journal of consulting and clinical psychology*, *82*(1), 75-89	primarily targeted at depression
Cooley-Strickland, M. R., Griffin, R. S., Darney, D., Otte, K., & Ko, J. (2011). Urban African American youth exposed to community violence: A school-based anxiety preventive intervention efficacy study. *Journal of prevention & intervention in the community*, *39*(2), 149-166.	**10.** The programme is indicated
Cutuli, J. J., Gillham, J. E., Chaplin, T. M., Reivich, K. J., Seligman, M. E., Gallop, R. J., & Freres, D. R. (2013). Preventing adolescents' externalizing and internalizing symptoms: Effects of the Penn Resiliency Program. *The international journal of emotional education*, *5*(2), 67-79	**6.** The study collects data in one specific area of anxiety **12.** The intervention is primarily targeted at another outcome
Edwards, M., Adams, E. M., Waldo, M., Hadfield, O. D., & Biegel, G. M. (2014). Effects of a mindfulness group on latino adolescent students: Examining levels of perceived stress, mindfulness, self-compassion, and psychological symptoms. *The Journal for Specialists in Group Work*, *39*(2), 145-163.	**10.** The programme is not delivered universally
Fox, J. K., Warner, C. M., Lerner, A. B., Ludwig, K., Ryan, J. L., Colognori, D., & Brotman, L. M. (2012). Preventive intervention for anxious preschoolers and their parents: strengthening early emotional development. *Child Psychiatry & Human Development*, *43*(4), 544-559.	**10.** The program is selective
Fukushima-Flores, M., & Miller, L. (2011). FRIENDS Parent Project: Effectiveness of parent training in reducing parent anxiety in a universal prevention program for anxiety symptoms in school children. *Behaviour Change*, *28*(2), 57-74.	**11.** The intervention is parent-based
Gillham, J. E., Reivich, K. J., Freres, D. R., Lascher, M., Litzinger, S., Shatté, A., & Seligman, M. E. (2006). School-based prevention of depression and anxiety symptoms in early adolescence: A pilot of a parent intervention component. *School Psychology Quarterly*, *21*(3), 323-348.	**10**. The programme is selective

Humphrey, N., Kalambouka, A., Wigelsworth, M., Lendrum, A., Lennie, C., & Farrell, P. (2010). New Beginnings: evaluation of a short social–emotional intervention for primary-aged children. *Educational Psychology*, *30*(5), 513-532.	**6.** No data collected for overall anxiety **9.** The programme is not CBT or mindfulness
Huppert, F. A., & Johnson, D. M. (2010). A controlled trial of mindfulness training in schools: The importance of practice for an impact on well-being. *The Journal of Positive Psychology*, *5*(4), 264-274.	**6.** No data collected for overall anxiety
Liddle, I., & Macmillan, S. (2010). Evaluating the FRIENDS programme in a Scottish setting. *Educational Psychology in Practice*, *26*(1), 53-67.	**10.** The programme is selective (based on teacher nomination)
Lowry-Webster, H. M., Barrett, P. M., & Lock, S. (2003). A universal prevention trial of anxiety symptomology during childhood: Results at 1-year follow-up. *Behaviour change*, *20*(1), 25-43	**8.** The study reports 1 year follow up data
Mattejat, F., Pauschardt, J., & Eimecke, S. (2010). Prevention of childhood anxiety and depression: efficacy of an additional parent training program. *Verhaltenstherapie*, *20*, 000-000	**10.** The programme is selective
McLoone, J., Hudson, J. L., & Rapee, R. M. (2006). Treating Anxiety Disorders in a School Setting. *Education & Treatment of Children*, *29*(2), 219-242	**2.** Study does not collect empirical data – review paper
Metz, S. M., Frank, J. L., Reibel, D., Cantrell, T., Sanders, R., & Broderick, P. C. (2013). The effectiveness of the Learning to BREATHE program on adolescent emotion regulation. *Research in Human Development*, *10*(3), 252-272.	**6.** No data collected for anxiety
Napoli, M., Krech, P. R., & Holley, L. C. (2005). Mindfulness training for elementary school students: The attention academy. *Journal of Applied School Psychology*, *21*(1), 99-125.	**6.** The study collects data in one specific area of anxiety e.g. test anxiety
Opre, A., Buzgar, R., & Dumulescu, D. (2013). Empirical Support for Self kit: a rational emotive education program. *Journal of Cognitive & Behavioral Psychotherapies*,	**6.** No data collected for overall anxiety

13(2), 557-573.	
Parker, A. E., Kupersmidt, J. B., Mathis, E. T., Scull, T. M., & Sims, C. (2014). The impact of mindfulness education on elementary school students: evaluation of the Master Mind program. *Advances in School Mental Health Promotion*, *7*(3), 184-204.	**12.** The program is primarily targeted at reducing substance abuse
Pattison, C., & Lynd-Stevenson, R. M. (2001). The prevention of depressive symptoms in children: The immediate and long-term outcomes of a school-based program. *Behaviour Change*, *18*(02), 92-102.	**12.** The intervention is primarily targeted at depression
Raes, F., Griffith, J. W., Van der Gucht, K., & Williams, J. M. G. (2013). School-based prevention and reduction of depression in adolescents: A cluster-randomized controlled trial of a mindfulness group program. *Mindfulness*, 1-10.	**12.** The intervention is primarily targeted at another outcome
Roberts, C., Kane, R., Thomson, H., Bishop, B., & Hart, B. (2003). The prevention of depressive symptoms in rural school children: a randomized controlled trial. *Journal of consulting and clinical psychology*, *71*(3), 622-628.	**10**. The programme is selective **12.** The intervention is primarily targeted at another outcome
Ruini, C., Ottolini, F., Tomba, E., Belaise, C., Albieri, E., Visani, D., & Fava, G. A. (2009). School intervention for promoting psychological well-being in adolescence. *Journal of Behavior Therapy and Experimental Psychiatry*, *40*(4), 522-532.	**9.** The intervention is not mindfulness or CBT
Stallard, P., Simpson, N., Anderson, S., Hibbert, S., & Osborn, C. (2007). The FRIENDS emotional health programme: Initial findings from a school-based project. *Child and Adolescent Mental Health*, *12*(1), 32-37	**7.** No control group
Stallard, P., Simpson, N., Anderson, S., & Goddard, M. (2008). The FRIENDS emotional health prevention programme: 12 month follow-up of a universal UK school based trial. European *Child & Adolescent Psychiatry, 17(5), 283-289.*	**8.** The study reports 1 year follow up data **7.** No control group
Stallard, P., Phillips, R., Montgomery, A., Spears, M., Anderson, R., Taylor, J., & Sayal, K. (2013). A cluster randomised controlled trial to determine the clinical	**6.** The study collects data in one specific

effectiveness and cost-effectiveness of classroom-based cognitive-behavioural therapy (CBT) in reducing symptoms of depression in high-risk adolescents. *Health technology assessment (Winchester, England), 17*(47), 1-110.	area of anxiety **10.** The programme is selective
Swannell, S., Hand, M., & Martin, G. (2009). The effects of a universal mental health promotion programme on depressive symptoms and other difficulties in year eight high school students in Queensland, Australia. *School mental health, 1*(4), 229-239.	**7.** No control group

B. Coding Protocols

Study ID Number: 1

Full Study Reference in proper format: Collins, S., Woolfson, L. M., & Durkin, K. (2013). Effects on coping skills and anxiety of a universal school-based mental health intervention delivered in Scottish primary schools. *School Psychology International*, *35*(1), 85-100

Intervention Name (description of study): Lessons for living: Think well, do well

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Essential Quality Indicators

Quality Indicators for Describing Participants

Was sufficient information provided to determine/confirm whether the participants demonstrated the disability or difficulties presented?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?

☐ Yes - *The classes were randomly allocated to intervention groups. Table 1 reports the demographics of the participants which are comparable across groups. No significant differences on anxiety at pre-test.*
☐ No
☐ N/A
☐ Unknown/unable to code

Sufficient information regarding the treatment providers is provided. If so, does the research indicate that they are comparable across conditions?

☐ Yes- *There was a psychologist-led and teacher-led condition. However, both treatment providers attended the same training on how to deliver the manualised programme*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Implementation of the Intervention and Description of Comparison Conditions

Was the intervention clearly described and specified?

☐ Yes- *Short summary of the intervention programme was described in text, see Table 2*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the fidelity of implementation described and assessed?

☐ Yes – *Adherence to the treatment manual was recorded after each session. Table 3 demonstrated a high level of intervention fidelity*

☐ No
☐ N/A
☐ Unknown/unable to code

Was the nature of services provided in comparison conditions described?
☐ Yes- *The comparison children undertook their regular PSE sessions with their teachers*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Outcome Measures and for Data Analysis

Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalized performance?
☐ Yes
☐ No
☐ N/A- *This review is primarily interested in anxiety*
☐ Unknown/unable to code

Were outcomes for capturing the interventions effect measured at the appropriate times?
☐ Yes – *Pre-test, post-test (10 weeks) and follow-up (6 months later)*
☐ No
☐ N/A
☐ Unknown/unable to code

Were the data analysis techniques appropriately linked to key research questions and hypotheses? Were they appropriately linked to the unit of analysis in the study?
☐ Yes
☐ No - *ANOVAs and planned contrasts used however, the unit of analysis (individual child) does not match the unit of randomisation ie. the school*
☐ N/A
☐ Unknown/unable to code

Did the research report include not only inferential statistics but also effect size calculations?
☐ Yes
☐ No *Inferential statistics included but effect sizes not computed*
☐ N/A
☐ Unknown/unable to code

Desirable Quality Indicators
Was severe overall attrition documented? If so, is attrition comparable across samples? Is overall attrition less than 30%?
☐ Yes
☐ No – *A total of 8/16 classes completed 6-month follow up. At post-test, 14/16 classes completed the data set.*
☐ N/A
☐ Unknown/unable to code

Did the study provide further reliability data, such as internal consistency reliability, test-retest reliability and inter-rater reliability (when appropriate) for outcome measures?

☒ Yes *The SPENCE has high internal consistency (Cronbach's alpha = 0.92) and adequate test-retest reliability (r = 0.63)*
☐ No
☐ N/A
☐ Unknown/unable to code

Were outcomes for capturing the intervention's effect measured beyond an immediate posttest?

☒ Yes – *6 month follow-up data provided for 50% of classes*
☐ No
☐ N/A
☐ Unknown/unable to code

Was evidence of the criterion-related validity and construct validity of the measures provided?

☒ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Did the research team assess not only surface features of fidelity implementation (e.g., number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?

☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Was any documentation of the nature of instruction or series provided in comparison conditions?

☒ Yes- *Normal PSHE lesson*
☐ No
☐ N/A
☐ Unknown/unable to code

8. Were results presented in a clear, coherent fashion?

☒ Yes *Table used to demonstrate changes in anxiety levels – SD's and Means provided*
☐ No
☐ N/A
☐ Unknown/unable to code

Overall Rating of Evidence: ☐ 3 ☒ 2 ☐ 1 ☐ 0
This score was given because all but two of the essential criteria have been met: (1) the unit of analysis (individual child) does not match the unit of randomisation (the school) and (2) effect sizes are not reported. The desirable criteria have been met.

Study ID Number: 2

Full Study Reference in proper format: Anticich, S. A., Barrett, P. M., Silverman, W., Lacherez, P., & Gillies, R. (2013). The prevention of childhood anxiety and promotion of resilience among preschool-aged children: a universal school based trial. *Advances in school mental health promotion, 6*(2), 93-121.

Intervention Name (description of study): FUN Friends

Essential Quality Indicators

Quality Indicators for Describing Participants

Was sufficient information provided to determine/confirm whether the participants demonstrated the disability or difficulties presented?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?

☐ Yes - *The classes were randomly allocated to intervention groups. Table 2 reports the characteristics of the participants which are comparable across groups. There were group differences at baseline but ANCOVA was used to account for this.*
☐ No
☐ N/A
☐ Unknown/unable to code

Sufficient information regarding the treatment providers is provided. If so, does the research indicate that they are comparable across conditions?

☐ Yes- *All teachers received an intensive 1-day training workshop where they were also provided with a Fun FRIENDS Leader Manual*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Implementation of the Intervention and Description of Comparison Conditions

Was the intervention clearly described and specified?

☐ Yes- *Short summary of the intervention programme was described in text, see Table 1*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the fidelity of implementation described and assessed?

☐ Yes – *Adherence to the treatment manual was recorded after each session.*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the nature of services provided in comparison conditions described?
☒ Yes- *There was an active control who completed the You Can Do It programme. The wait-list group continued with the standard curriculum*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Outcome Measures and for Data Analysis

Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalized performance?
☐ Yes
☐ No
☒ N/A- *This review is primarily interested in anxiety*
☐ Unknown/unable to code

Were outcomes for capturing the interventions effect measured at the appropriate times?
☒ Yes – *Pre-test, post-test and follow-up (12 months later)*
☐ No
☐ N/A
☐ Unknown/unable to code

Were the data analysis techniques appropriately linked to key research questions and hypotheses? Were they appropriately linked to the unit of analysis in the study?
☐ Yes
☒ No - *ANOVAs and planned contrasts used however, the unit of analysis (individual child) does not match the unit of randomisation ie. the school*
☐ N/A
☐ Unknown/unable to code

Did the research report include not only inferential statistics but also effect size calculations?
☐ Yes
☒ No *Inferential statistics included but effect sizes not computed*
☐ N/A
☐ Unknown/unable to code

Desirable Quality Indicators
Was severe overall attrition documented? If so, is attrition comparable across samples? Is overall attrition less than 30%?
☒ Yes – *There was between 16 and 25% of data missing for the father response measures. All other variables had <10% of missing data.*
☐ No
☐ N/A
☐ Unknown/unable to code

Did the study provide further reliability data, such as internal consistency reliability, test-retest reliability and inter-rater reliability (when appropriate) for outcome measures?
☐ Yes *The Pre-School Anxiety Scale (PAS) has adequate psychometric properties, references provided*
☐ No
☐ N/A
☐ Unknown/unable to code

Were outcomes for capturing the intervention's effect measured beyond an immediate posttest?
☐ Yes – *12-month follow up*
☐ No
☐ N/A
☐ Unknown/unable to code

Was evidence of the criterion-related validity and construct validity of the measures provided?
☐ Yes – *The PAS is comparable to the Child Behaviour Checklist, correlations ranging from 0.59-0.68*
☐ No
☐ N/A
☐ Unknown/unable to code

Did the research team assess not only surface features of fidelity implementation (e.g., number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?
☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Was any documentation of the nature of instruction or series provided in comparison conditions?
☐ Yes- *Yes detailed description of the active control and the wait-list conditions*
☐ No
☐ N/A
☐ Unknown/unable to code

8. Were results presented in a clear, coherent fashion?
☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Overall Rating of Evidence: ☐ 3 ☐ 2 ☐ 1 ☐ 0
This score was given because all but two of the essential criteria have been met: (1) the unit of analysis (individual child) does not match the unit of randomisation (the school) and (2) effect sizes are not reported. The desirable criteria have been met.

Study ID Number: 3

Full Study Reference in proper format: Essau, C. A., Conradt, J., Sasagawa, S., & Ollendick, T. H. (2012). Prevention of anxiety symptoms in children: Results from a universal school-based trial. *Behavior therapy*, *43*(2), 450-464

Intervention Name (description of study): FRIENDS for Life

Essential Quality Indicators

Quality Indicators for Describing Participants

Was sufficient information provided to determine/confirm whether the participants demonstrated the disability or difficulties presented?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?

☐ Yes - *The classes were randomly allocated to intervention groups. Participant demographics are described on p.454 and appear comparable. No group differences at pre-test.*
☐ No
☐ N/A
☐ Unknown/unable to code

Sufficient information regarding the treatment providers is provided. If so, does the research indicate that they are comparable across conditions?

☐ Yes- *All facilitators received an intensive 3-day training workshop where they were also provided with a FRIENDS Leader Manual*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Implementation of the Intervention and Description of Comparison Conditions

Was the intervention clearly described and specified?

☐ Yes- *Short summary of the intervention programme was described in text*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the fidelity of implementation described and assessed?

☐ Yes – *Adherence to the treatment manual was recorded after each session and ranged from 78% to 97%*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the nature of services provided in comparison conditions described?
☒ Yes- *There was a wait-list control who continued with the standard curriculum. They were informed that the researcher would contact them at 'regular intervals to learn about how they were doing in school'*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Outcome Measures and for Data Analysis

Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalized performance?
☐ Yes
☐ No
☒ N/A- *This review is primarily interested in anxiety*
☐ Unknown/unable to code

Were outcomes for capturing the interventions effect measured at the appropriate times?
☒ Yes – *Pre-test, post-test and follow-up (6/12 months later)*
☐ No
☐ N/A
☐ Unknown/unable to code

Were the data analysis techniques appropriately linked to key research questions and hypotheses? Were they appropriately linked to the unit of analysis in the study?
☐ Yes
☒ No - *ANOVAs and planned contrasts used however, the unit of analysis (individual child) does not match the unit of randomisation ie. the school*
☐ N/A
☐ Unknown/unable to code

Did the research report include not only inferential statistics but also effect size calculations?
☐ Yes
☒ No *Inferential statistics included but effect sizes not computed*
☐ N/A
☐ Unknown/unable to code

Desirable Quality Indicators
Was severe overall attrition documented? If so, is attrition comparable across samples? Is overall attrition less than 30%?
☐ Yes
☐ No
☐ N/A
☒ Unknown/unable to code

Did the study provide further reliability data, such as internal consistency reliability, test-retest reliability and inter-rater reliability (when appropriate) for outcome measures?

☐Yes *In this study, the SPENCE had an internal consistency of 0.9. The test-retest reliability has been shown to be 0.6*
☐No
☐N/A
☐Unknown/unable to code

Were outcomes for capturing the intervention's effect measured beyond an immediate posttest?
☐Yes *– 6 and 12-month follow up*
☐No
☐N/A
☐Unknown/unable to code

Was evidence of the criterion-related validity and construct validity of the measures provided?
☐Yes *– The SCAS is comparable to the Revised Children's Manifest Anxiety Scale, r = 0.71*
☐No
☐N/A
☐Unknown/unable to code

Did the research team assess not only surface features of fidelity implementation (e.g., number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?
☐Yes
☐No
☐N/A
☐Unknown/unable to code

Was any documentation of the nature of instruction or series provided in comparison conditions?
☐Yes- *Yes description of the wait-list conditions*
☐No
☐N/A
☐Unknown/unable to code

8. Were results presented in a clear, coherent fashion?
☐Yes *– Table 1 provides a clear description of Means and SD's for each condition and outcome*
☐No
☐N/A
☐Unknown/unable to code

Overall Rating of Evidence: ☐ 3 ☐ 2 ☐ 1 ☐ 0
This score was given because all but two of the essential criteria have been met: (1) the unit of analysis (individual child) does not match the unit of randomisation (the school) and (2) effect sizes are not reported. The desirable criteria have been met.

Study ID Number: 4

Full Study Reference in proper format: Miller, L. D., Laye-Gindhu, A., Liu, Y., March, J. S., Thordarson, D. S., & Garland, E. J. (2011). Evaluation of a preventive intervention for child anxiety in two randomized attention-control school trials. *Behaviour research and therapy, 49*(5), 315-323

Intervention Name (description of study): FRIENDS for Life

Essential Quality Indicators

Quality Indicators for Describing Participants

Was sufficient information provided to determine/confirm whether the participants demonstrated the disability or difficulties presented?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?

☐ Yes - *The classes were randomly allocated to intervention. No significant differences at between groups at baseline, as shown by t-test.*
☐ No
☐ N/A
☐ Unknown/unable to code

Sufficient information regarding the treatment providers is provided. If so, does the research indicate that they are comparable across conditions?

☐ Yes- *All facilitators received an intensive 1-day training workshop where they were also provided with a FRIENDS Leader Manual*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Implementation of the Intervention and Description of Comparison Conditions

Was the intervention clearly described and specified?

☐ Yes- *Short summary of the intervention programme was described in text, see p.317*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the fidelity of implementation described and assessed?

☐ Yes – *Adherence to the treatment manual was assessed through random audiotape recordings which were then rated by trained graduate students*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the nature of services provided in comparison conditions described?
☒ Yes- *There was an attention control group who were read an adventure story (Harry Potter) – description is provided on p.317*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Outcome Measures and for Data Analysis

Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalized performance?
☐ Yes
☐ No
☒ N/A- *This review is primarily interested in anxiety*
☐ Unknown/unable to code

Were outcomes for capturing the interventions effect measured at the appropriate times?
☒ Yes – *Pre-test, post-test and follow-up (5 months and 1-year later)*
☐ No
☐ N/A
☐ Unknown/unable to code

Were the data analysis techniques appropriately linked to key research questions and hypotheses? Were they appropriately linked to the unit of analysis in the study?
☐ Yes
☒ No - *ANOVAs and planned contrasts used however, the unit of analysis (individual child) does not match the unit of randomisation ie. the school*
☐ N/A
☐ Unknown/unable to code

Did the research report include not only inferential statistics but also effect size calculations?
☐ Yes
☒ No *Inferential statistics included but effect sizes not computed*
☐ N/A
☐ Unknown/unable to code

Desirable Quality Indicators
Was severe overall attrition documented? If so, is attrition comparable across samples? Is overall attrition less than 30%?
☐ Yes
☐ No
☐ N/A
☒ Unknown/unable to code

Did the study provide further reliability data, such as internal consistency reliability, test-retest reliability and inter-rater reliability (when appropriate) for outcome measures?

☒ Yes *The MASC has an internal consistency of 0.9 and a test-retest reliability of 0.72-0.93*
☐ No
☐ N/A
☐ Unknown/unable to code

Were outcomes for capturing the intervention's effect measured beyond an immediate posttest?
☒ Yes – *5 month and 1 year follow up*
☐ No
☐ N/A
☐ Unknown/unable to code

Was evidence of the criterion-related validity and construct validity of the measures provided?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Did the research team assess not only surface features of fidelity implementation (e.g., number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Was any documentation of the nature of instruction or series provided in comparison conditions?
☒ Yes- *Yes description of the attention control was provided on p.317*
☐ No
☐ N/A
☐ Unknown/unable to code

8. Were results presented in a clear, coherent fashion?
☒ Yes – *Table 1 provides a clear description of Means and SD's for each condition and outcome*
☐ No
☐ N/A
☐ Unknown/unable to code

Overall Rating of Evidence: ☐ 3 ☒ 2 ☐ 1 ☐ 0
This score was given because all but three of the essential criteria have been met: (1) the unit of analysis (individual child) does not match the unit of randomisation (the school) and (2) effect sizes are not reported. The desirable criteria have been met.

Study ID Number: 5

Full Study Reference in proper format: Miller, L. D., Laye-Gindhu, A., Bennett, J. L., Liu, Y., Gold, S., March, J. S., & Waechtler, V. E. (2011). An effectiveness study of a culturally enriched school-based CBT anxiety prevention program. *Journal of Clinical Child & Adolescent Psychology, 40*(4), 618-629

Intervention Name (description of study): Culturally Enriched FRIENDS for Life

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Essential Quality Indicators

Quality Indicators for Describing Participants

Was sufficient information provided to determine/confirm whether the participants demonstrated the disability or difficulties presented?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?

☐ Yes - *The classes were randomly allocated to intervention groups. Table 1 also provides descriptive statistics about the participant demographics. Multi-level modelling used to account for class differences.*
☐ No
☐ N/A
☐ Unknown/unable to code

Sufficient information regarding the treatment providers is provided. If so, does the research indicate that they are comparable across conditions?

☐ Yes- *All facilitators received an intensive 1-day training workshop where they were also provided with a FRIENDS Leader Manual*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Implementation of the Intervention and Description of Comparison Conditions

Was the intervention clearly described and specified?

☐ Yes- *Summary of the intervention programme was described in text, see p.622. This included detail about how the programme was enriched for aboriginal students.*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the fidelity of implementation described and assessed?

☐ Yes – *Adherence to the treatment manual was assessed through random audiotape recordings which were then rated by a trained graduate.*
☐ No
☐ N/A

☐Unknown/unable to code

Was the nature of services provided in comparison conditions described?
☐Yes- *There was a wait-list control who received the interest following data collection at Time 2*
☐No
☐N/A
☐Unknown/unable to code

Quality Indicators for Outcome Measures and for Data Analysis

Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalized performance?
☐Yes
☐No
☐N/A- *This review is primarily interested in anxiety*
☐Unknown/unable to code

Were outcomes for capturing the interventions effect measured at the appropriate times?
☐Yes – *Pre-test, post-test and follow-up (3 months later)*
☐No
☐N/A
☐Unknown/unable to code

Were the data analysis techniques appropriately linked to key research questions and hypotheses? Were they appropriately linked to the unit of analysis in the study?
☐Yes
☐No - *ANOVAs and planned contrasts used however, the unit of analysis (individual child) does not match the unit of randomisation ie. the school*
☐N/A
☐Unknown/unable to code

Did the research report include not only inferential statistics but also effect size calculations?
☐Yes
☐No *Inferential statistics included but effect sizes not computed*
☐N/A
☐Unknown/unable to code

Desirable Quality Indicators
Was severe overall attrition documented? If so, is attrition comparable across samples? Is overall attrition less than 30%?
☐Yes
☐No – *Attrition at post-test was 24.7% but at follow-up was 40.7%*
☐N/A
☐Unknown/unable to code

Did the study provide further reliability data, such as internal consistency reliability, test-retest reliability and inter-rater reliability (when appropriate) for outcome measures?
☒ Yes - *The authors report that the MASC has an internal consistency of 0.9 and a test-retest reliability of 0.88*
☐ No
☐ N/A
☐ Unknown/unable to code

Were outcomes for capturing the intervention's effect measured beyond an immediate posttest?
☒ Yes – *3 month follow up*
☐ No
☐ N/A
☐ Unknown/unable to code

Was evidence of the criterion-related validity and construct validity of the measures provided?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Did the research team assess not only surface features of fidelity implementation (e.g., number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Was any documentation of the nature of instruction or series provided in comparison conditions?
☒ Yes- *Yes description provided on p. 621*
☐ No
☐ N/A
☐ Unknown/unable to code

8. Were results presented in a clear, coherent fashion?
☒ Yes – *Table 1 provides a clear description of Means and SD's for each condition and outcome*
☐ No
☐ N/A
☐ Unknown/unable to code

Overall Rating of Evidence: ☐ 3 ☒ 2 ☐ 1 ☐ 0
This score was given because all but two of the essential criteria have been met: The desirable criteria have been met.

Study ID Number: 6

Full Study Reference in proper format: Miller, L. D., Short, C., Garland, E. J., & Clark, S. (2010). The ABCs of CBT (Cognitive Behavior Therapy): Evidence-Based Approaches to Child Anxiety in Public School Settings. *Journal of Counselling & Development*, *88*(4), 432-439.

Intervention Name (description of study): Taming Worry Dragons

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Essential Quality Indicators

Quality Indicators for Describing Participants

Was sufficient information provided to determine/confirm whether the participants demonstrated the disability or difficulties presented?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?

☐ Yes - *The classes were randomly allocated to intervention groups. No significant differences between groups on age, gender or symptom scores at baseline*
☐ No
☐ N/A
☐ Unknown/unable to code

Sufficient information regarding the treatment providers is provided. If so, does the research indicate that they are comparable across conditions?

☐ Yes- *All facilitators received an intensive 1-day training workshop*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Implementation of the Intervention and Description of Comparison Conditions

Was the intervention clearly described and specified?

☐ Yes- *A short summary of the intervention programme was described in text, see p.435*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the fidelity of implementation described and assessed?

☐ Yes – *Adherence to the intervention protocol was assessed by completion of a checklist*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the nature of services provided in comparison conditions described?

☒ Yes- *There was a wait-list control who received the intervention following data collection at Time 2*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Outcome Measures and for Data Analysis

Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalized performance?
☐ Yes
☐ No
☒ N/A- *This review is primarily interested in anxiety*
☐ Unknown/unable to code

Were outcomes for capturing the interventions effect measured at the appropriate times?
☒ Yes – *Pre-test and post-test data was recorded*
☐ No
☐ N/A
☐ Unknown/unable to code

Were the data analysis techniques appropriately linked to key research questions and hypotheses? Were they appropriately linked to the unit of analysis in the study?
☐ Yes
☒ No - *ANOVAs and planned contrasts used however, the unit of analysis (individual child) does not match the unit of randomisation ie. the school*
☐ N/A
☐ Unknown/unable to code

Did the research report include not only inferential statistics but also effect size calculations?
☒ Yes – *Eta squared values are reported*
☐ No
☐ N/A
☐ Unknown/unable to code

Desirable Quality Indicators
Was severe overall attrition documented? If so, is attrition comparable across samples? Is overall attrition less than 30%?
☐ Yes
☐ No
☐ N/A
☒ Unknown/unable to code

Did the study provide further reliability data, such as internal consistency reliability, test-retest reliability and inter-rater reliability (when appropriate) for outcome measures?
☒ Yes - *The authors report that the MASC has a test-retest reliability of 0.79 in clinical samples and 0.88 in school-based samples*

☐No
☐N/A
☐Unknown/unable to code

Were outcomes for capturing the intervention's effect measured beyond an immediate posttest?
☐Yes
☐No
☐N/A
☐Unknown/unable to code

Was evidence of the criterion-related validity and construct validity of the measures provided?
☐Yes
☐No
☐N/A
☐Unknown/unable to code

Did the research team assess not only surface features of fidelity implementation (e.g., number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?
☐Yes
☐No
☐N/A
☐Unknown/unable to code

Was any documentation of the nature of instruction or series provided in comparison conditions?
☐Yes
☐No
☐N/A
☐Unknown/unable to code

8. Were results presented in a clear, coherent fashion?
☐Yes – *Table 1 provides a clear description of Means and SD's for each condition and outcome*
☐No
☐N/A
☐Unknown/unable to code

Overall Rating of Evidence: ☐ 3 ☐ 2 ☐ 1 ☐ 0
This score was given because all but one of the essential criteria have been met: (1) the unit of analysis (individual child) does not match the unit of randomisation (the school). The desirable criteria have been met.

Study ID Number: 7

Full Study Reference in proper format: Pahl, K. M., & Barrett, P. M. (2010). Preventing anxiety and promoting social and emotional strength in preschool children: A universal evaluation of the Fun FRIENDS program. *Advances in School Mental Health Promotion, 3*(3), 14-25

Intervention Name (description of study): FUN Friends

Essential Quality Indicators

Quality Indicators for Describing Participants

Was sufficient information provided to determine/confirm whether the participants demonstrated the disability or difficulties presented?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?

☐ Yes - *The classes were randomly allocated to intervention groups. Statistical tests showed significant differences in gender, age or pre-test scores between groups.*
☐ No
☐ N/A
☐ Unknown/unable to code

Sufficient information regarding the treatment providers is provided. If so, does the research indicate that they are comparable across conditions?

☐ Yes- *All facilitators received an intensive 1-day training workshop*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Implementation of the Intervention and Description of Comparison Conditions

Was the intervention clearly described and specified?

☐ Yes- *Table 1 provides a clear outline of the FUN Friends programme on a session by session basis*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the fidelity of implementation described and assessed?

☐ Yes – *Adherence to the intervention protocol was assessed by completion of a checklist. Mean adherence was 94%*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the nature of services provided in comparison conditions described?
☒ Yes- *There was a wait-list control who received normal curriculum from their class teacher*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Outcome Measures and for Data Analysis

Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalized performance?
☐ Yes
☐ No
☒ N/A- *This review is primarily interested in anxiety*
☐ Unknown/unable to code

Were outcomes for capturing the interventions effect measured at the appropriate times?
☒ Yes – *Pre-test, post-test and 12-month follow up*
☐ No
☐ N/A
☐ Unknown/unable to code

Were the data analysis techniques appropriately linked to key research questions and hypotheses? Were they appropriately linked to the unit of analysis in the study?
☐ Yes
☒ No - *ANOVAs were used however, the unit of analysis (individual child) does not match the unit of randomisation ie. the school*
☐ N/A
☐ Unknown/unable to code

Did the research report include not only inferential statistics but also effect size calculations?
☒ Yes – *Eta squared values are reported for significant outcomes*
☐ No
☐ N/A
☐ Unknown/unable to code

Desirable Quality Indicators
Was severe overall attrition documented? If so, is attrition comparable across samples? Is overall attrition less than 30%?
☒ Yes – *Fewer than 2%*
☐ No
☐ N/A
☐ Unknown/unable to code

Did the study provide further reliability data, such as internal consistency reliability, test-retest reliability and inter-rater reliability (when appropriate) for outcome measures?

☐ Yes
☒ No - *The authors do not report the psychometric properties of the PAS*
☐ N/A
☐ Unknown/unable to code

Were outcomes for capturing the intervention's effect measured beyond an immediate posttest?
☒ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Was evidence of the criterion-related validity and construct validity of the measures provided?
☒ Yes – *The PAS has good construct validity against the CBCL, correlations ranging from .59 to .68*
☐ No
☐ N/A
☐ Unknown/unable to code

Did the research team assess not only surface features of fidelity implementation (e.g., number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Was any documentation of the nature of instruction or series provided in comparison conditions?
☒ Yes – *The waitlist control receive normal curriculum classes*
☐ No
☐ N/A
☐ Unknown/unable to code

8. Were results presented in a clear, coherent fashion?
☒ Yes – *Table 2 provides a clear description of Means and SD's for each condition and outcome*
☐ No
☐ N/A
☐ Unknown/unable to code

Overall Rating of Evidence: ☒ 3 ☐ 2 ☐ 1 ☐ 0
This score was given because all but two of the essential criteria have been met: (1) the unit of analysis (individual child) does not match the unit of randomisation (the school). The desirable criteria have been met.

Study ID Number: 8

Full Study Reference in proper format: Mostert, J., & Loxton, H. (2008). Exploring the effectiveness of the FRIENDS program in reducing anxiety symptoms among South African children. *Behaviour Change, 25*(2), 85-96

Intervention Name (description of study): FRIENDS for Life

Essential Quality Indicators

Quality Indicators for Describing Participants

Was sufficient information provided to determine/confirm whether the participants demonstrated the disability or difficulties presented?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?

☐ Yes
☐ No - *The classes were randomly allocated to intervention groups. The authors report that a 'non-equivalent' control was used and there is no report of the participant demographics. However, a statistical test showed no difference in age or gender of the IG and CG.*
☐ N/A
☐ Unknown/unable to code

Sufficient information regarding the treatment providers is provided. If so, does the research indicate that they are comparable across conditions?

☐ Yes- *All facilitators received an intensive 1-day training workshop*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Implementation of the Intervention and Description of Comparison Conditions

Was the intervention clearly described and specified?

☐ Yes
☐ No – *A very brief paragraph is provided on p.88*
☐ N/A
☐ Unknown/unable to code

Was the fidelity of implementation described and assessed?

☐ Yes
☐ No – *The authors describe that an 'independent observer' was present during the sessions. However, there is no description of whether they were monitoring implementation fidelity*
☐ N/A
☐ Unknown/unable to code

Was the nature of services provided in comparison conditions described?
☒ Yes- *There was a wait-list control who received normal curriculum from their class teacher*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Outcome Measures and for Data Analysis

Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalized performance?
☐ Yes
☐ No
☒ N/A- *This review is primarily interested in anxiety*
☐ Unknown/unable to code

Were outcomes for capturing the interventions effect measured at the appropriate times?
☒ Yes – *Pre-test and post-test measures were taken*
☐ No
☐ N/A
☐ Unknown/unable to code

Were the data analysis techniques appropriately linked to key research questions and hypotheses? Were they appropriately linked to the unit of analysis in the study?
☐ Yes
☒ No - *ANOVAs were used however, the unit of analysis (individual child) does not match the unit of randomisation ie. the school*
☐ N/A
☐ Unknown/unable to code

Did the research report include not only inferential statistics but also effect size calculations?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Desirable Quality Indicators
Was severe overall attrition documented? If so, is attrition comparable across samples? Is overall attrition less than 30%?
☒ Yes – *Fewer than 2%*
☐ No
☐ N/A
☐ Unknown/unable to code

Did the study provide further reliability data, such as internal consistency reliability, test-retest reliability and inter-rater reliability (when appropriate) for outcome measures?
☐ Yes

☒ No - *The authors do not report the psychometric properties of the PAS*
☐ N/A
☐ Unknown/unable to code

Were outcomes for capturing the intervention's effect measured beyond an immediate posttest?
☒ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Was evidence of the criterion-related validity and construct validity of the measures provided?
☒ Yes – *The PAS has good construct validity against the CBCL, correlations ranging from .59 to .68*
☐ No
☐ N/A
☐ Unknown/unable to code

Did the research team assess not only surface features of fidelity implementation (e.g., number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Was any documentation of the nature of instruction or series provided in comparison conditions?
☒ Yes – *The waitlist control receive normal curriculum classes*
☐ No
☐ N/A
☐ Unknown/unable to code

8. Were results presented in a clear, coherent fashion?
☒ Yes – *Table 2 provides a clear description of Means and SD's for each condition and outcome*
☐ No
☐ N/A
☐ Unknown/unable to code

Overall Rating of Evidence: ☐ 3 ☐ 2 ☐ 1 ☒ 0
This score was given because five of the essential criteria have not been met.

Study ID Number: 9

Full Study Reference in proper format: Lock, S., & Barrett, P. M. (2003). A longitudinal study of developmental differences in universal preventive intervention for child anxiety. *Behaviour Change, 20*(4), 183-199.

Intervention Name (description of study): FRIENDS for Life

Essential Quality Indicators

Quality Indicators for Describing Participants

Was sufficient information provided to determine/confirm whether the participants demonstrated the disability or difficulties presented?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?

☐ Yes
☐ No - *The classes were randomly allocated to intervention groups. However, there was no description of whether the two groups were comparable based on demographics. Group equivalence not established.*
☐ N/A
☐ Unknown/unable to code

Sufficient information regarding the treatment providers is provided. If so, does the research indicate that they are comparable across conditions?

☐ Yes- *All facilitators were psychologists and were trained extensively in the delivery of the FRIENDS programme*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Implementation of the Intervention and Description of Comparison Conditions

Was the intervention clearly described and specified?

☐ Yes –*There is a short paragraph on p.187 which outlines the FRIENDS for Life programme. Reference is also made to previous papers for a comprehensive review.*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the fidelity of implementation described and assessed?

☐ Yes –*The Program Integrity Checklist was used to assess implementation fidelity*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the nature of services provided in comparison conditions described?
☒ Yes- *There was a wait-list control who received normal curriculum from their class teacher*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Outcome Measures and for Data Analysis

Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalized performance?
☐ Yes
☐ No
☒ N/A- *This review is primarily interested in anxiety*
☐ Unknown/unable to code

Were outcomes for capturing the interventions effect measured at the appropriate times?
☒ Yes – *Pre-test, post-test and 12-month follow up measures were taken*
☐ No
☐ N/A
☐ Unknown/unable to code

Were the data analysis techniques appropriately linked to key research questions and hypotheses? Were they appropriately linked to the unit of analysis in the study?
☐ Yes
☒ No - *ANOVAs and planned contrasts were used however, the unit of analysis (individual child) does not match the unit of randomisation ie. the school*
☐ N/A
☐ Unknown/unable to code

Did the research report include not only inferential statistics but also effect size calculations?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Desirable Quality Indicators
Was severe overall attrition documented? If so, is attrition comparable across samples? Is overall attrition less than 30%?
☐ Yes
☒ No – *At post-test, the attrition rates were comparable between comparison (2.7%) and intervention groups (8.8%). By the 12-month follow up, the attrition rate for the comparison group had risen to 72.6%.*
☐ N/A
☐ Unknown/unable to code

Did the study provide further reliability data, such as internal consistency reliability, test-retest reliability and inter-rater reliability (when appropriate) for outcome measures?

☐ Yes
☐ No - *The authors do not report the specific psychometric properties of the SCAS or the RCMAS*
☐ N/A
☐ Unknown/unable to code

Were outcomes for capturing the intervention's effect measured beyond an immediate posttest?
☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Was evidence of the criterion-related validity and construct validity of the measures provided?
☐ Yes – *The authors report that the SCAS has validity with other measures of anxiety – references provided*
☐ No
☐ N/A
☐ Unknown/unable to code

Did the research team assess not only surface features of fidelity implementation (e.g., number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?
☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Was any documentation of the nature of instruction or series provided in comparison conditions?
☐ Yes – *The waitlist control receive normal curriculum classes*
☐ No
☐ N/A
☐ Unknown/unable to code

8. Were results presented in a clear, coherent fashion?
☐ Yes – *Table 2 provides a clear description of Means and SD's for each condition and outcome*
☐ No
☐ N/A
☐ Unknown/unable to code

Overall Rating of Evidence: ☐ 3 ☐ 2 ☐ 1 ☐ 0
This score was given because all but three of the essential criteria have been met. The desirable criteria have been met.

Study ID Number: 10

Full Study Reference in proper format: Barrett, P. M., Lock, S., & Farrell, L. J. (2005). Developmental differences in universal preventive intervention for child anxiety. *Clinical Child Psychology and Psychiatry, 10*(4), 539-555

Intervention Name (description of study): FRIENDS for Life

Essential Quality Indicators

Quality Indicators for Describing Participants

Was sufficient information provided to determine/confirm whether the participants demonstrated the disability or difficulties presented?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?

☐ Yes - *The classes were randomly allocated to intervention groups. Variables that differenced at pre-test were included as covariates.*
☐ No
☐ N/A
☐ Unknown/unable to code

Sufficient information regarding the treatment providers is provided. If so, does the research indicate that they are comparable across conditions?

☐ Yes- *All facilitators were psychologists/doctoral candidates and were trained extensively in the delivery of the FRIENDS programme*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Implementation of the Intervention and Description of Comparison Conditions

Was the intervention clearly described and specified?

☐ Yes –*There is a short paragraph on p.545 which outlines the FRIENDS for Life programme.*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the fidelity of implementation described and assessed?

☐ Yes –*The Program Integrity Checklist was used to assess implementation fidelity. Integrity checks showed 88.8%-95.6% concordance between session and manual content.*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the nature of services provided in comparison conditions described?
☒ Yes- *There was a wait-list control who received normal curriculum from their class teacher*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Outcome Measures and for Data Analysis

Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalized performance?
☐ Yes
☐ No
☒ N/A- *This review is primarily interested in anxiety*
☐ Unknown/unable to code

Were outcomes for capturing the interventions effect measured at the appropriate times?
☒ Yes – *Pre-test, post-test and 12-month follow up measures were taken*
☐ No
☐ N/A
☐ Unknown/unable to code

Were the data analysis techniques appropriately linked to key research questions and hypotheses? Were they appropriately linked to the unit of analysis in the study?
☐ Yes
☒ No - *ANOVAs and planned contrasts were used however, the unit of analysis (individual child) does not match the unit of randomisation ie. the school*
☐ N/A
☐ Unknown/unable to code

Did the research report include not only inferential statistics but also effect size calculations?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Desirable Quality Indicators
Was severe overall attrition documented? If so, is attrition comparable across samples? Is overall attrition less than 30%?
☐ Yes
☒ No – *Of the entire sample, 33% of children were absent at both post-assessment and 12 month follow up*
☐ N/A
☐ Unknown/unable to code

Did the study provide further reliability data, such as internal consistency reliability, test-retest reliability and inter-rater reliability (when appropriate) for outcome measures?

☒ Yes - *The authors report that the SCAS has 'high internal consistency and adequate test-retest reliability' – references are provided for exact figures to be obtained*
☐ No
☐ N/A
☐ Unknown/unable to code

Were outcomes for capturing the intervention's effect measured beyond an immediate posttest?
☒ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Was evidence of the criterion-related validity and construct validity of the measures provided?
☒ Yes – *The authors report that the SCAS has validity with other measures of anxiety – references provided*
☐ No
☐ N/A
☐ Unknown/unable to code

Did the research team assess not only surface features of fidelity implementation (e.g., number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Was any documentation of the nature of instruction or series provided in comparison conditions?
☒ Yes – *The waitlist control receive normal curriculum classes*
☐ No
☐ N/A
☐ Unknown/unable to code

8. Were results presented in a clear, coherent fashion?
☒ Yes – *Table 2 provides a clear description of Means and SD's for each condition and outcome*
☐ No
☐ N/A
☐ Unknown/unable to code

Overall Rating of Evidence: ☐ 3 ☒ 2 ☐ 1 ☐ 0
This score was given because all but two of the essential criteria have been met. The desirable criteria have been met.

Study ID Number: 11

Full Study Reference in proper format: Barrett, P., & Turner, C. (2001). Prevention of anxiety symptoms in primary school children: Preliminary results from a universal school-based trial. *British Journal of Clinical Psychology, 40*(4), 399-410

Intervention Name (description of study): FRIENDS for Life

Essential Quality Indicators

Quality Indicators for Describing Participants

Was sufficient information provided to determine/confirm whether the participants demonstrated the disability or difficulties presented?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?

☐ Yes
☐ No - *Age was variable across groups and not included as a covariate*
☐ N/A
☐ Unknown/unable to code

Sufficient information regarding the treatment providers is provided. If so, does the research indicate that they are comparable across conditions?

☐ Yes- *All facilitators received a 1-day intensive workshop to support them in their delivery of the FRIENDS programme*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Implementation of the Intervention and Description of Comparison Conditions

Was the intervention clearly described and specified?

☐ Yes –*There is a short paragraph on p.403 which outlines the FRIENDS for Life programme. Table 1 provides additional information*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the fidelity of implementation described and assessed?

☐ Yes –*A Likert-scale was completed at the end of each session to monitor implementation fidelity.*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the nature of services provided in comparison conditions described?
☒ Yes- *There was a wait-list control who received normal curriculum from their class teacher*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Outcome Measures and for Data Analysis

Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalized performance?
☐ Yes
☐ No
☒ N/A- *This review is primarily interested in anxiety*
☐ Unknown/unable to code

Were outcomes for capturing the interventions effect measured at the appropriate times?
☒ Yes – *Pre-test and post-test data was collected*
☐ No
☐ N/A
☐ Unknown/unable to code

Were the data analysis techniques appropriately linked to key research questions and hypotheses? Were they appropriately linked to the unit of analysis in the study?
☐ Yes
☒ No - *ANOVAs and planned contrasts were used however, the unit of analysis (individual child) does not match the unit of randomisation ie. the school*
☐ N/A
☐ Unknown/unable to code

Did the research report include not only inferential statistics but also effect size calculations?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Desirable Quality Indicators
Was severe overall attrition documented? If so, is attrition comparable across samples? Is overall attrition less than 30%?
☒ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Did the study provide further reliability data, such as internal consistency reliability, test-retest reliability and inter-rater reliability (when appropriate) for outcome measures?

☒ Yes - *The authors report that the RCMAS had a high internal consistency and test-retest reliability (r = 0.68). References are provided with regard to the SCAS*
☐ No
☐ N/A
☐ Unknown/unable to code

Were outcomes for capturing the intervention's effect measured beyond an immediate posttest?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Was evidence of the criterion-related validity and construct validity of the measures provided?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Did the research team assess not only surface features of fidelity implementation (e.g., number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Was any documentation of the nature of instruction or series provided in comparison conditions?
☒ Yes – *The waitlist control receive normal curriculum classes*
☐ No
☐ N/A
☐ Unknown/unable to code

8. Were results presented in a clear, coherent fashion?
☒ Yes – *Table 2 provides a clear description of Means and SD's for each condition and outcome*
☐ No
☐ N/A
☐ Unknown/unable to code

Overall Rating of Evidence: ☐ 3 ☐ 2 ☒ 1 ☐ 0
This score was given because all but three of the essential criteria have been met. The desirable criteria have been met.

Study ID Number: 12

Full Study Reference in proper format: Lowry-Webster, H. M., Barrett, P. M., & Dadds, M. R. (2001). A universal prevention trial of anxiety and depressive symptomatology in childhood: Preliminary data from an Australian study. *Behaviour Change, 18*(1), 36-50

Intervention Name (description of study): FRIENDS for Life

Essential Quality Indicators

Quality Indicators for Describing Participants

Was sufficient information provided to determine/confirm whether the participants demonstrated the disability or difficulties presented?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?

☐ Yes - *Covariates (RCMAS and CDI) were used to control for pre-test differences between groups. A chi-squared test showed no significant differences in the gender ratio or in scores on the SCAS*
☐ No
☐ N/A
☐ Unknown/unable to code

Sufficient information regarding the treatment providers is provided. If so, does the research indicate that they are comparable across conditions?

☐ Yes- *All teachers received a 2-day intensive workshop to support them in their delivery of the FRIENDS programme*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Implementation of the Intervention and Description of Comparison Conditions

Was the intervention clearly described and specified?

☐ Yes –*There is a short paragraph on p.42 which outlines the FRIENDS for Life programme.*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the fidelity of implementation described and assessed?

☐ Yes – *Random videotaping of sessions was conducted to ensure program integrity and no significant departures from the prescribed program manual were noted*
☐ No
☐ N/A

☐Unknown/unable to code

Was the nature of services provided in comparison conditions described?
☐Yes- *There was a wait-list control who received normal curriculum from their class teacher*
☐No
☐N/A
☐Unknown/unable to code

Quality Indicators for Outcome Measures and for Data Analysis

Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalized performance?
☐Yes
☐No
☐N/A- *This review is primarily interested in anxiety*
☐Unknown/unable to code

Were outcomes for capturing the interventions effect measured at the appropriate times?
☐Yes – *Pre-test and post-test data was collected*
☐No
☐N/A
☐Unknown/unable to code

Were the data analysis techniques appropriately linked to key research questions and hypotheses? Were they appropriately linked to the unit of analysis in the study?
☐Yes
☐No - *ANOVAs and planned contrasts were used however, the unit of analysis (individual child) does not match the unit of randomisation ie. the school*
☐N/A
☐Unknown/unable to code

Did the research report include not only inferential statistics but also effect size calculations?
☐Yes – *Eta squared values were provided*
☐No
☐N/A
☐Unknown/unable to code

Desirable Quality Indicators
Was severe overall attrition documented? If so, is attrition comparable across samples? Is overall attrition less than 30%?
☐Yes
☐No
☐N/A
☐Unknown/unable to code

Did the study provide further reliability data, such as internal consistency reliability, test-retest reliability and inter-rater reliability (when appropriate) for outcome measures?

☒ Yes - *The authors report that the internal consistency (r = .92) and test-retest reliability (r = .60) of the SCAS. References are provided for the RCMAS.*

☐ No

☐ N/A

☐ Unknown/unable to code

Were outcomes for capturing the intervention's effect measured beyond an immediate posttest?

☐ Yes

☒ No

☐ N/A

☐ Unknown/unable to code

Was evidence of the criterion-related validity and construct validity of the measures provided?

☐ Yes

☒ No

☐ N/A

☐ Unknown/unable to code

Did the research team assess not only surface features of fidelity implementation (e.g., number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?

☐ Yes

☒ No

☐ N/A

☐ Unknown/unable to code

Was any documentation of the nature of instruction or series provided in comparison conditions?

☒ Yes – *The waitlist control receive normal curriculum classes*

☐ No

☐ N/A

☐ Unknown/unable to code

8. Were results presented in a clear, coherent fashion?

☒ Yes – *Table 1 provides a clear description of Means and SD's for each condition and outcome*

☐ No

☐ N/A

☐ Unknown/unable to code

Overall Rating of Evidence: ☒ 3 ☐ 2 ☐ 1 ☐ 0

This score was given because all but one of the essential criteria have been met. The desirable criteria have been met.

Study ID Number: 13

Full Study Reference in proper format: van de Weijer-Bergsma, E., Langenberg, G., Brandsma, R., Oort, F. J., & Bögels, S. M. (2014). The effectiveness of a school-based mindfulness training as a program to prevent stress in elementary school children. *Mindfulness, 5*(3), 238-248.

Intervention Name (description of study): MindfulKids

Essential Quality Indicators

Quality Indicators for Describing Participants

Was sufficient information provided to determine/confirm whether the participants demonstrated the disability or difficulties presented?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?

☐ Yes - *The classes were randomly allocated to intervention groups. In the multi-level analysis, classroom was entered as a fixed variable to account for class differences.*
☐ No
☐ N/A
☐ Unknown/unable to code

Sufficient information regarding the treatment providers is provided. If so, does the research indicate that they are comparable across conditions?

☐ Yes- *The intervention was provided by the same trainer – an experienced mindfulness teacher*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Implementation of the Intervention and Description of Comparison Conditions

Was the intervention clearly described and specified?

☐ Yes – *Table 2 provides an extremely clear account of the intervention on a session by session basis*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the fidelity of implementation described and assessed?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Was the nature of services provided in comparison conditions described?
☒ Yes- *There was a wait-list control who received normal curriculum from their class teacher*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Outcome Measures and for Data Analysis

Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalized performance?
☐ Yes
☐ No
☒ N/A- *This review is primarily interested in anxiety*
☐ Unknown/unable to code

Were outcomes for capturing the interventions effect measured at the appropriate times?
☒ Yes – *Pre-test, post-test and 7 week follow-up data was collected*
☐ No
☐ N/A
☐ Unknown/unable to code

Were the data analysis techniques appropriately linked to key research questions and hypotheses? Were they appropriately linked to the unit of analysis in the study?
☐ Yes
☒ No - *Regression analysis was used however, the unit of analysis (individual child) does not match the unit of randomisation ie. the school*
☐ N/A
☐ Unknown/unable to code

Did the research report include not only inferential statistics but also effect size calculations?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Desirable Quality Indicators
Was severe overall attrition documented? If so, is attrition comparable across samples? Is overall attrition less than 30%?
☐ Yes
☐ No
☐ N/A
☒ Unknown/unable to code

Did the study provide further reliability data, such as internal consistency reliability, test-retest reliability and inter-rater reliability (when appropriate) for outcome measures?

☒ Yes - *The authors report that the internal consistency (r = .92) and test-retest reliability (r = .60) of the SCAS. References are provided for the RCMAS.*
☐ No
☐ N/A
☐ Unknown/unable to code

Were outcomes for capturing the intervention's effect measured beyond an immediate posttest?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Was evidence of the criterion-related validity and construct validity of the measures provided?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Did the research team assess not only surface features of fidelity implementation (e.g., number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Was any documentation of the nature of instruction or series provided in comparison conditions?
☒ Yes – *The waitlist control receive normal curriculum classes*
☐ No
☐ N/A
☐ Unknown/unable to code

8. Were results presented in a clear, coherent fashion?
☒ Yes – *Table 1 provides a clear description of Means and SD's for each condition and outcome*
☐ No
☐ N/A
☐ Unknown/unable to code

Overall Rating of Evidence: ☐ 3 ☐ 2 ☒ 1 ☐ 0
This score was given because all but three of the essential criteria were met. The desirable criteria have been met.

Study ID Number: 14

Full Study Reference in proper format: Sibinga, E., Perry-Parrish, C., Chung, S. E., Johnson, S. B., Smith, M., & Ellen, J. M. (2013). School-based mindfulness instruction for urban male youth: A small randomized controlled trial. *Preventive medicine*, *57*(6), 799-801

Intervention Name (description of study): Mindfulness-Based Stress Reduction

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Essential Quality Indicators

Quality Indicators for Describing Participants

Was sufficient information provided to determine/confirm whether the participants demonstrated the disability or difficulties presented?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?

☐ Yes - *The children were randomly allocated to intervention groups.*
☐ No
☐ N/A
☐ Unknown/unable to code

Sufficient information regarding the treatment providers is provided. If so, does the research indicate that they are comparable across conditions?

☐ Yes- *The intervention was provided by the same trainer – an experienced mindfulness teacher*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Implementation of the Intervention and Description of Comparison Conditions

Was the intervention clearly described and specified?

☐ Yes - *References provided to studies that describe the intervention in greater detail*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the fidelity of implementation described and assessed?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Was the nature of services provided in comparison conditions described?

☒ Yes- *There was a wait-list control who received 'Healthy Topics' – a health education program*
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Outcome Measures and for Data Analysis

Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalized performance?
☐ Yes
☐ No
☒ N/A- *This review is primarily interested in anxiety*
☐ Unknown/unable to code

Were outcomes for capturing the interventions effect measured at the appropriate times?
☒ Yes – *Pre-test and post-test data was collected*
☐ No
☐ N/A
☐ Unknown/unable to code

Were the data analysis techniques appropriately linked to key research questions and hypotheses? Were they appropriately linked to the unit of analysis in the study?
☒ Yes – *Regression analysis was used and the unit of analysis (individual child) matched the unit of randomisation*
☐ No
☐ N/A
☐ Unknown/unable to code

Did the research report include not only inferential statistics but also effect size calculations?
☒ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Desirable Quality Indicators
Was severe overall attrition documented? If so, is attrition comparable across samples? Is overall attrition less than 30%?
☐ Yes
☐ No
☐ N/A
☒ Unknown/unable to code

Did the study provide further reliability data, such as internal consistency reliability, test-retest reliability and inter-rater reliability (when appropriate) for outcome measures?
☐ Yes
☒ No

☐N/A
☐Unknown/unable to code

Were outcomes for capturing the intervention's effect measured beyond an immediate posttest?
☐Yes
☐No
☐N/A
☐Unknown/unable to code

Was evidence of the criterion-related validity and construct validity of the measures provided?
☐Yes
☐No
☐N/A
☐Unknown/unable to code

Did the research team assess not only surface features of fidelity implementation (e.g., number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?
☐Yes
☐No
☐N/A
☐Unknown/unable to code

Was any documentation of the nature of instruction or series provided in comparison conditions?
☐Yes – *The comparison group received a Healthy Topics program – reference provided*
☐No
☐N/A
☐Unknown/unable to code

8. Were results presented in a clear, coherent fashion?
☐Yes – *Table 1 provides a clear description of Means and SD's for each condition and outcome*
☐No
☐N/A
☐Unknown/unable to code

Overall Rating of Evidence: ☐ 3 ☐ 2 ☐ 1 ☐ 0
This score was given because all but one of the essential criteria were met. The desirable criteria have been met.

Study ID Number: 15

Full Study Reference in proper format: Rose, H., Miller, L., & Martinez, Y. (2009). "FRIENDS for Life": The Results of a Resilience-Building, Anxiety-Prevention Program in a Canadian Elementary School. *Professional School Counselling, 12*(6), 400-407.

Intervention Name (description of study): FRIENDS for Life

Essential Quality Indicators

Quality Indicators for Describing Participants

Was sufficient information provided to determine/confirm whether the participants demonstrated the disability or difficulties presented?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?

☐ Yes
☐ No - *The classes were randomly allocated to intervention groups. There was no report on whether the classes were comparable based on demographics. Group differences in separation anxiety at pre-test. No adjustments made.*
☐ N/A
☐ Unknown/unable to code

Sufficient information regarding the treatment providers is provided. If so, does the research indicate that they are comparable across conditions?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Implementation of the Intervention and Description of Comparison Conditions

Was the intervention clearly described and specified?

☐ Yes – *There is a brief description of the intervention on p.401*
☐ No
☐ N/A
☐ Unknown/unable to code

Was the fidelity of implementation described and assessed?

☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Was the nature of services provided in comparison conditions described?
☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Quality Indicators for Outcome Measures and for Data Analysis

Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalized performance?
☐ Yes
☐ No
☐ N/A- *This review is primarily interested in anxiety*
☐ Unknown/unable to code

Were outcomes for capturing the interventions effect measured at the appropriate times?
☐ Yes – *Pre-test and post-test data was collected*
☐ No
☐ N/A
☐ Unknown/unable to code

Were the data analysis techniques appropriately linked to key research questions and hypotheses? Were they appropriately linked to the unit of analysis in the study?
☐ Yes
☐ No - *ANOVAs and planned contrasts were used however, the unit of analysis (individual child) does not match the unit of randomisation ie. the school*
☐ N/A
☐ Unknown/unable to code

Did the research report include not only inferential statistics but also effect size calculations?
☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Desirable Quality Indicators
Was severe overall attrition documented? If so, is attrition comparable across samples? Is overall attrition less than 30%?
☐ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Did the study provide further reliability data, such as internal consistency reliability, test-retest reliability and inter-rater reliability (when appropriate) for outcome measures?
☐ Yes- *The authors report that the MASC has an internal consistency of 0.9 and a test-retest reliability of 0.88*

☐ No
☐ N/A
☐ Unknown/unable to code

Were outcomes for capturing the intervention's effect measured beyond an immediate posttest?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Was evidence of the criterion-related validity and construct validity of the measures provided?
☒ Yes
☐ No
☐ N/A
☐ Unknown/unable to code

Did the research team assess not only surface features of fidelity implementation (e.g., number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

Was any documentation of the nature of instruction or series provided in comparison conditions?
☐ Yes
☒ No
☐ N/A
☐ Unknown/unable to code

8. Were results presented in a clear, coherent fashion?
☒ Yes – *Table 1 provides a clear description of Means and SD's for each condition and outcome*
☐ No
☐ N/A
☐ Unknown/unable to code

Overall Rating of Evidence: ☐ 3 ☐ 2 ☐ 1 ☒ 0
This score was given because five of the essential criteria were not met. The desirable criteria have been met.

C. Weight of Evidence Criteria

Methodological Quality (WoE A)

The WoE A criteria for quasi-experimental/experimental designs is derived from Gersten et al. (2005). In this paper, Gersten et al. (2005) propose a set of dichotomous criteria to rate the quality of research (either 'high' quality or 'acceptable' quality). However, Gersten also explains that these definitions are tentative. As a result, this review has slightly adapted the definitions to produce criteria for high, medium and low weighting.

For a rating of 3 (high weighting), the study must meet:	**For a rating of 2 (medium weighting),** the study must meet:	**For a rating of 1 (low weighting),** the study must meet:
• All but one of the essential criteria • At least 4 of the desirable criteria	• All but two of the essential criteria • At least 2 of the desirable criteria	• All but three of the essential criteria • At least 1 of the desirable criteria

If the criteria for a low weighting are not met, a score of 0 (very low) is awarded. Note: an unknown/unable to code is scored as not meeting the criteria due to insufficient information

Methodological Relevance (WoE B)

Methodological relevance considers whether the design was suitable for evaluating the effectiveness of a universal anxiety-prevention programme. For WoE B, criteria are based on evidence hierarchies (Brannan, 1992). These hierarchies typically place studies with high threats to internal validity at the bottom (e.g. no control group) and those less prone to such validity threats towards the top (e.g. active control group, random assignment of participants). The additional criterion of multiple sources and/or methods is in place to support the triangulation of data and enhance the validity of the findings (Barker, Pistrang & Elliot, 2002). For a rationale of coding for each study, see appendix 3.

To gain a 'high' weighting for methodological relevance, the study must have:	**For a 'medium' weighting,** the study must have:	**For a 'low' weighting**, the study must have the following:
• An active control group • Random assignment of participants • 2+ methods/sources of information	• A comparison group e.g. waitlist control • Random assignment by group • 2 + methods/sources of information	• A comparison group • Random assignment by group • 1 + methods/sources of information

Relevance of Evidence (WoE C)

Relevance of evidence (WoE C) explores the extent to which the study, and its findings, is relevant to the review question. The rationale for each criterion is as follows:

- A full description of the program ensures that the content can be checked against the six core principles of mindfulness identified by Iyadurai, Morris and Dunsmuir (2014) and the definition of CBT provided by James, Soler and Weatherall (2005).
- According to Barker, Pistrang and Elliot (2002), follow-up data is a feature of good practice in experimental designs. This is because it enables the true preventative impact of the intervention to be determined.
- When measuring effectiveness, it can be useful to have multiple sources and/or methods in place to support the triangulation of data. This also has the benefit of raising the validity of the findings (Barker, Pistrang & Elliot, 2002).

To gain a 'high' weighting for the relevance to the review question, the study must have the following:	**To gain a 'medium' weighting for the relevance to the review question,** the study must have two of the following:	**To gain a 'low' weighting for the relevance to the review question,** the study must have at least one of the following:
• The program is fully described • Pre and post data • 1 + follow-up data points • Multiple methods/sources of information	• The program is fully described • Pre and post data • 1 + follow-up data points • Multiple methods/sources of information	• The program is fully described • Pre and post data • 1+ follow-up data points • Multiple methods/sources of information

Overall Weight of Evidence (WoE D)

Using the criteria explained above, each study was given a weighting of 3 (high), 2 (medium), or 1 (low) for WoE A, B and C. These scores were then averaged to correspond to an overall weight (WoE D) for each study. These scores are based on the premise that to obtain a high overall WoE, the study must have obtained a 'high' weighting twice in either WoE A, B or C. Similarly, to obtain a medium overall WoE, the study must have obtained a 'medium' weighting twice in either WoE A, B or C. The scores are as follows:

High overall weight of evidence: Average score of at least 2.5

Medium overall weight of evidence: Average score of between 1.5 and 2.4

Low overall weight of evidence: Average score of less than 1

D. Application of the WoE Criteria

Reviewed Study	WoE A	WoE B	WoE C
Collins, Woolfson and Durkin (2013)	*Medium* All but two of the essential criteria have been met: (1) the unit of analysis does not match the unit of randomisation and (2) effect sizes are not reported.	*Low* The study has a comparison group and random assignment by group. However, there is only one source of information about anxiety (SCAS)	*Medium* The programme is fully described and there is a 6 month follow-up.
Anticich, Barrett, Silverman, Lacherez and Gillies (2013)	*Medium* All but two of the essential criteria have been met: (1) the unit of analysis does not match the unit of randomisation and (2) effect sizes are not reported.	*Low* The study has an active control and random assignment by group. However, there is only one source of information about anxiety (PAS)	*Medium* The programme is fully described and there is a 12-month follow up. However, there is only one source of information.
Essau, Conradt, Sasagawa and Ollendick (2012)	*Medium* All but two of the essential criteria have been met: (1) the unit of analysis does not match the unit of randomisation and (2) effect sizes are not reported.	*Low* The study has a wait-list control and random assignment by group. However, there is only one source of information about anxiety (SCAS)	*Medium* The programme is fully described and there is a 12 month follow-up. However, there is only one source of information.
Miller et al., (2011)	*Medium* All but two of the essential criteria have been met: (1) the unit of analysis does not match the unit of randomisation and (2) effect sizes are not reported	*Low* The study has an active control and random assignment by group. However, there is only one source of information about anxiety (MASC)	*Medium* The programme is fully described and there is a follow up period. However, there is only one source of information.
Miller et al., (2011)	*Medium* All but two of the essential criteria have been met: (1) the unit of analysis does not match the unit of randomisation and (2) effect sizes are not reported.	*Low* The study has a wait-list control and random assignment by group. However, there is only one source of information about anxiety (MASC)	*Medium* The programme is fully described and there is a 12 month follow-up.
Miller, Short, Garland and Clark (2010)	*High* All but one of the essential criteria have been met: (1) the unit of analysis does not match the unit of randomisation.	*Low* The study has a wait-list control and random assignment by group. However, there is only one source of information about anxiety (MASC)	*Low* The programme is fully described. However, there is no follow-up and there is only one source of information.
Pahl and Barrett (2010)	*High* All but two of the essential criteria have been met: (1) the unit of analysis does not match the unit of randomisation	*Low* The study has a wait-list control and random assignment by group. However, there is only one source of information about anxiety (PAS)	*Medium* The programme is fully described and there is a 12 month follow-up. However, there is only one source of information.
Mostert and Loxton (2008)	*Very Low* Five of the essential criteria have not been met.	*Low* The study has a wait-list control and random assignment by group. However, there is only one source of information about anxiety (SCAS)	*Medium* The programme is fully described and there is a follow up period. However, there is only one source of information.

Lock and Barrett (2003)	*Low* All but three of the essential criteria have been met: (1) participant demographics were not described (2) the unit of analysis does not match the unit of randomisation and (3) effect sizes are not reported	*Medium* The study has a wait-list control and random assignment by group. There are two sources of data sources for anxiety (RCMAS and SCAS)	*High* The programme is fully described; there is a 12 month follow-up period and multiple methods of information.
Barrett, Lock and Farrell (2005)	*Medium* All but two of the essential criteria have been met: (1) the unit of analysis does not match the unit of randomisation and (2) effect sizes are not reported	*Low* The study has a wait-list control and random assignment by group. However, there is only one source of information about anxiety (SCAS)	*Medium* The programme is fully described and there is a 12 month follow-up. However, there is only one source of information.
Barrett and Turner (2001)	*Low* All but three of the essential criteria have been met: (1) participant demographics were not described (2) the unit of analysis does not match the unit of randomisation and (3) effect sizes are not reported	*Medium* The study has a wait-list control and random assignment by group. There are two sources of data sources for anxiety (RCMAS and SCAS)	*Medium* The programme is fully described and there are multiple sources of information.
Lowry-Webster, Barrett and Dadds (2001);	*High* All but one of the essential criteria have been met: (1) the unit of analysis does not match the unit of randomisation	*Medium* The study has a wait-list control and random assignment by group. There are two sources of data for anxiety (RCMAS and SCAS)	*Medium* The programme is fully described and there are multiple sources of information. However, no follow-up data.
van de Weijer-Bergsma, Langenberg, Brandsma, Oort and Bögels (2014)	*Low* All but three of the essential criteria have been met: (1) fidelity checks are not described (2) the unit of analysis does not match the unit of randomisation and (3) effect sizes are not reported	*Medium* The study has a wait-list control and random assignment by group. There are two sources of data for anxiety.	*Medium* The programme is fully described and there is a follow-up period. However, there is only one source of information.
Sibinga et al. (2013)	*High* All but one of the essential criteria has been met - fidelity was not assessed.	*High* The study has an active control and random assignment by participant. There are also two sources of data about anxiety.	*Medium* The programme is fully described and there are multiple sources of information. However, no follow-up data.
Rose, Miller & Martinez (2009)	*Very Low* Five of the essential criteria have not been met.	*Low* The study has a wait-list control and random assignment by group. However, there is only one source of information about anxiety (SCAS)	*Low* The programme is fully described. However, there is no follow-up and there is only one source of information.

E. Summary of studies included in this review

Authors	Programme Name	Program Facilitator	Follow up?	Significant outcomes (Universal)	Evaluation of study
Collins, Woolfson and Durkin (2013)	Lessons for living: Think well, do well	Psychologist or Teacher	• 6 months	Post-test: Significant difference between anxiety scores in the treatment (psychologist and teacher-led) and control groups, $p<.001$. Follow up: Effects maintained to 6-months	✓ Use of psychologist and teacher-led interventions × No correction for familywise error × The unit of analysis does not match the unit of randomisation
Anticich et al. (2013)	Fun FRIENDS	Teacher	• 12 months	Factors scores are used in the analysis – this makes it difficult to ascertain the results for anxiety measures alone. However, the authors report that there was a significant interaction between time and group (high/low anxious) at $p<0.001$. This was maintained to follow-up.	✓ Active control group – 'You Can Do It!' ✓ 12-month follow-up × High level of missing/incomplete data
Essau et al. (2012)	FRIENDS for Life	Graduate students in Clinical Child Psychology	• 6 months • 12 months	Post-test: No significant group differences Follow up: Significant difference between anxiety scores for the treatment and control groups at 12-month follow-up, $p<.0.01$	✓ 12-month follow-up ✓ Bonferroni correction used × Largely self-report × Poor parent attendance at workshops (<50%)
Miller et al., (2011a)	FRIENDS for Life	Teacher and school counsellor/ grad student	• 2.5 months • 5 months • 12 months	Post-test: No significant group difference – both groups (attention-control and FRIENDs for Life) showed a decrease in anxiety symptoms. Follow up: Effects maintained to 1 year	✓ Attention-control – Harry Potter Story Telling ✓ Long-term follow up × High level of missing/incomplete data
Miller et al., (2011b)	Culturally enriched FRIENDS for Life	Teacher and school counsellor or Support Worker	• 12 months	Post-test: No significant group differences Follow up: No significant group difference – both groups showed a decrease in anxiety symptoms by 6 months follow-up, $p<.025$	× The unit of analysis does not match the unit of randomisation × Small sample size of highly anxious subgroup - the power of sig. tests is reduced
Miller et al., (2010)	Taming Worry Dragons	Teachers	• No follow-up	Post-test: : No significant group difference – both groups showed a decrease in anxiety symptoms	× The authors wrote the TWD programme and may be invested in its success × Little info about control group
Pahl and Barrett (2010)	Fun FRIENDS	Clinically trained post-graduate student	• 12 months	Post-test: No significant group differences Follow up: Not enough data to compare group differences. However, a significant decrease in anxiety scores was evident from pre-intervention to 12-month follow up for the Fun FRIENDS group, $p<.05$	× Participants in the sample were primarily middle to upper class × High level of missing/incomplete data

Mostert and Loxton (2008)	FRIENDS for Life	Not reported	•	12 months	Post-test: No significant group differences Follow-up: Significant decrease in anxiety scores from pre-test to 4 month and 6 month follow up, p =0.	✓ ×	Bonferroni adjustment made Small sample size, n = 45
Lock and Barrett (2003)	FRIENDS for Life	Doctoral candidates or clinical masters psychologist	•	12 months	Post-test: Significant difference between anxiety scores in the treatment (psychologist and teacher-led) and control groups, p<.016) Follow-up: Effects maintained to follow-up	× ×	Small sample size of highly anxious subgroup - the power of sig. tests is reduced Barrett wrote the FRIENDS programme and may be invested in its success
Barrett, Lock and Farrell (2005)	FRIENDS for Life	Doctoral candidates or clinical masters psychologist	•	12 months	Post-test: No significant group differences Follow-up: Significant difference between anxiety scores for the treatment and control groups at 12-month follow-up, p <.0.05	× × ×	Poor parent attendance at workshops (<50%) Small sample size of highly anxious subgroup - the power of sig. tests is reduced Barrett wrote the FRIENDS programme and may be invested in its success
Barrett and Turner (2001)	FRIENDS for Life	Teacher or psychologist	•	No follow up	Post-test: Significant difference between anxiety scores in the treatment (psychologist and teacher-led) and control groups, p <.05.	✓ ×	Use of psychologist and teacher-led interventions As above
Lowry-Webster, Barrett and Dadds (2001)	FRIENDS for Life	Teachers	•	No follow up	Post-test: Significant difference between anxiety scores in the treatment and control group (p<.05), as measured by the SCAS. No group differences using the RCMAS.	× × ×	Poor parent attendance at workshops (<50%) Small sample size and therefore reduced power for the highly anxious subgroup Barrett wrote the FRIENDS programme and may be invested in its success
van de Weijer-Bergsma et al., (2014)	MindfulKids	Mindfulness practitioner	•	7 weeks	Post-test: No significant group differences Follow-up: Parents reported a significant decrease in their child's anxiety symptoms at 7-week follow up, p<.001	× ×	Large number of variables and no correction – increasing the risk of Type 1 error The unit of analysis does not match the unit of randomisation
Sibinga et al. (2013)	MBSR	Mindfulness practitioner	•	No follow up	Post-test: Significant difference between anxiety scores in the treatment and active-control group (p<.05), as measured by MASC. No group differences using the SCL-90R.	✓ × ×	Randomised control trial Unrepresentative sample – boys, low SES Small sample
Rose et al. (2009)	FRIENDS for Life	Teacher	•	No follow up	No significant outcomes	× ×	Qualitative element included but not subject to a thematic analysis Small sample size, N = 52

F. Copy of Information Leaflet for Schools

Phase 2: If parents are happy for their child to take part, they will be asked to complete an 'opt-in' consent form and return this to the class teacher. If we are oversubscribed for the focus group, children will be selected at random to participate. We understand that some children may find this disappointing but we will explain this process to them and make it as fair as possible.

What are the possible benefits of taking part?

The skills we want to teach your Year 5 children have been shown to improve positive thinking, coping with stress, problem-solving, attention and learning. We therefore hope that the children will find taking part in the programme helpful. We will send you a summary report of our findings at the end of this project.

What are the possible disadvantages of taking part?

We do not anticipate any risks to the individuals taking part in this study. Usually children enjoy taking part in group activities and filling in questionnaires. All children are welcome to leave out any questions they do not want to answer and this will be explained to them at the start of the programme.

Do you want to know anything else?

If you would like more information about our research, please contact us.

For further information please contact:

Amy Phipps or Dr. Sandra Dunsmuir

Thank you for reading this information.

This copy is for you to keep.

UCL

This study has been reviewed and approved by the UCL research ethics committee.

Mindfulness in Schools

Information sheet for schools

Please keep this copy

INFORMATION FOR TEACHERS

Your school is being invited to take part in a research study. Please take time to read this information booklet and discuss it with others if you wish. If there is anything that is not clear, or if you would like more information, please do not hesitate to contact the researcher.

Who are the researchers?

The researcher is Amy Phipps, a Trainee Educational Psychologist from University College London. Her research will be exploring whether mindfulness can improve emotional well-being and reduce levels of anxiety in children. This study will be supervised by Dr. Sandra Dunsmuir, Co-Director of the Educational Psychology Group.

Why is the study being done?

Anxiety, caused by excessive worry, is one of the most common disorders in school-aged children and adolescents. It can interfere with motivation, concentration, and affect school adjustment. This programme aims to give young people a number of effective strategies for coping with anxiety.

What is mindfulness?

Mindfulness encourages children to become aware of their thoughts and feelings and to notice how they change, moment by moment. This is explained to children as 'watching clouds float across the sky'. By learning to be in the present moment and not worry about the future, or reflect on the past, children are better able to maintain focus and engage in learning. It has also been found that mindfulness improves children's ability to manage their emotions.

What does taking part in the study involve?

Phase 1: Children in Year 5 will be invited to participate in a mindfulness programme that lasts for 8 weeks. Each session will last 1 hour and will be delivered to the *whole class*, by a trained professional. It is hoped that the class teacher will be present during the delivery of this intervention to support with classroom management however, they will not be asked to teach anything formally.

At the start and at the end of the programme, the class will be asked to complete some questionnaires about their thoughts and feelings. This will take 1 hour. You will also be asked to complete a questionnaire about all the children in the class. This should take 10 minutes.

Phase 2: For the next phase of the research, we would like to run a *focus group* to explore what the children thought about the programme and whether they have found it helpful.

A focus group is a small-group discussion, where children are asked about their feelings, thoughts, perceptions and opinions. A focus group usually has been 6 -8 children and lasts for approximately 30 minutes.

Will the children's data be kept confidential?

All information collected during the course of this research will be kept strictly confidential and will be stored in accordance with the Data Protection Act 1998.

Do children child have to take part?

It is entirely up to parents whether they would like their child to take part. Even if they decide to take part, they are able to withdraw at any point without giving a reason.

Phase 1: If parents are happy for their child to take part, they do not need to do anything. If they *do not wish* their child to take part, they have been asked to complete the 'opt-out' form and return this to the class teacher. It is important that this is given to the researcher and that alternative arrangements can be made for these children.

G. Example Workbook from the Mindful Attention Programme

Session 6: Worried about worry

Today

- We will look at worry: when it happens and how it can make us feel worse.
- We will try to let our worrying thoughts go….

Experiment: Typical extreme thoughts

1. Kids will think I'm stupid
2. I can't do anything right
3. Kids are going to laugh at me
4. Most people are against me
5. Nothing ever works out for me anymore
6. I'm going to look silly
7. It's my fault that things have gone wrong
8. I look like an idiot
9. I'll never be as good as other people are
10. I always get blamed for things that are not my fault
11. I am a failure

Have you ever had a thought like this – even if just for a few seconds?

Experiment: Charlie's thoughts

Charlie's Extreme Thoughts

What could you say to help Charlie let those thoughts go?

Remember, we can choose which sweets to eat, and we can learn to choose which thoughts to pay attention to, and which ones to let go.

If you had a thought bothering you, what would you say to yourself to help you let it go?

Experiment: Mindful Breathing

Where did your attention wander?

Sounds?	**Thoughts?**
Body sensations?	**Anywhere else?**

Experiment: When do you worry?

When do you worry? At bedtime? First thing in the morning? After school?	
Do you worry **after** things – for example, after a test, after an argument?	
Do you worry before things – for example, before a test or a sleepover?	
Who do you worry **with** - alone, with a parent?	

See if you can spot any extreme thoughts you have this week! If you like, you can write down any that you spot.

My Extreme Thoughts

Please choose either the Sounds and Thoughts meditation or the Body Scan this week.

My Meditation Practice Diary

Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday

H. Focus Group Questions

FOCUS GROUP – Facilitator Guide

INTRODUCTIONS AND ETHICS

- It is great to see you all today – thank you for agreeing to take part in this part of the investigation.
- For those of you that can't remember, my name is XX and I am from a University in London. Can you remind me of your names?
- For this part of our investigation, I want to give you the chance to talk about your thoughts, feelings and opinions. I want to know what you have thought about the mindfulness programme and whether it has been helpful. I really value your opinion and want to listen to what you have to say.
- Before we begin, I want you to know that I will not tell anyone else what we talk about today. However, if I am concerned about anything you say (e.g. if you are at risk of harm) then I will need to tell your class teacher. I will use the discussion that we have today to write a report for the University but I can promise that no-one will be able to tell who said what. I hope that this means you will feel able to speak honestly and do not hold anything back that you think is important. If at any point during the discussion you feel uncomfortable and want to leave, you can do so and you will not be in trouble. Please leave quietly and I will come and find you after the discussion group has finished.

GUIDELINES

- I will be asking some questions but other than that, this will be a space for you to all share your thoughts and feelings. This discussion group is not a test of your knowledge or skill, nor are there any right or wrong answers to the questions. As we work through the questions, you may find that you do not agree with the views of others. This is okay.
- In a minute, we shall begin the discussion and I shall start recording the discussion. Please talk loudly and clearly so the microphone can pick up what you say and we get a clear tape recording.

QUESTIONS

1. If you had to explain mindfulness to somebody else in your school, what would you say?

   Prompt: Can you describe what you did in the mindfulness programme?

2. Has mindfulness caused you to feel differently?

   Prompt: Can you give an example of when you noticed you were feeling differently?

3. Has mindfulness changed the number of "extreme thoughts" you have?

Prompt: Can you give an example of when you noticed you were thinking differently?

4. Have you noticed any other changes?

   Prompt: Have there been any changes in your behaviour – at home or in the classroom? Have there been any changes in your attitude? Have you learnt more about different thoughts/feelings?

5. You've named a number of positive changes here such as <give examples>. What was it about mindfulness that helped you to make those changes?

   Prompt: Was there anything that Mr. Morris taught you? Was there anything that your friends, parents or teachers did? Was there anything that you did?

6. What were the benefits of practising at home?

   Prompt: How did listening to the voice clips help you?

7. What made it difficult to practice at home?

8. What, if anything, would make it easier to practice at home?

   Prompt: Is there anything that you could do? Is there anything that your friends, teacher or parent could do?

I. Letter sent to Parents

Dear Parents/Carers,

The children have now completed Session 3 of the Mindfulness Programme. Last week we focused on noticing simple sensations in our body (for example, when we breathe). I asked the children to listen to a guided meditation of about 8-9 minutes. This is usually very relaxing and best done in bed just before they go to sleep. This week we focused on listening to simple everyday sounds, and again the children can listen to a guided meditation – this time focusing on a short piece of music and then everyday sounds. This is entirely optional for the children, but I would be grateful if you could gently remind your child to give it a go, if you are happy with this. Ideally, I'd like the children to try this most evenings – but whatever fits into your schedule would be great. Most children (and adults, if you would like to try it) find these simple guided meditations very relaxing.

You can download them from Fronter on the Year 5 page. If you click on the tab near the bottom called PSHE/Other, you can download the meditations there to any device you have available.

If you have any questions about the programme, please do feel free to speak with me at the school – I will be at the school on Tuesdays.

Many thanks for any support you are able to offer your child with this project.

Kind Regards
Jeremy Morris (Educational Psychologist and Cognitive Behaviour Therapist)

MAP: the Mindful Attention Programme

Instructors Manual

MAP: Table of Contents

Welcome

The Mindful Attention Programme (MAP) is the product of many years of work, including two years being trialled in mainstream class rooms in the UK. The result is I hope an important addition to class room life, and beyond. The course aims to help children from 9 to 13 years of age notice more of what goes on around them and to be able to respond to events, rather than react automatically to them. These simple skills can support improved attention and concentration in the class room. More importantly the skills learnt in this programme can enable children to deal with the ups and downs of life more effectively. The modern class room can be a stressful place, particularly in the years of transition from primary to secondary education, at the start of adolescence. At this stage in life, many children are involved in coping with big changes, increased responsibilities and trying to find their place in the more complex social world of the teenager. This programme is aimed to give children just prior to this transition (in years 5 and 6) or during the change (in years 6 and 7) coping skills to springboard them into their new place in the world. The programme aims to teach children a way of paying attention to everyday events with equanimity – an even balanced state of mind. The programme gives a start and an orientation in developing mindfulness. With the help of the school and others around them, the children can go on to live happier, more confident and balanced lives.

I really hope you enjoy teaching this curriculum and see positive change in many of the children who partake in the course.

What is Mindfulness?

Mindfulness can be described as paying attention to what is happening right now with curiosity and kindness. It often involves taking a bit of a step back from our usual way of looking – especially if we are busy, in a hurry or acting from a well-developed habit. The children are being asked to try to just 'be' and notice a little more of what is happening around them at this very moment. The first session of the MAP asks the children to observe a simple task (players passing a basketball). Whilst doing this many of the children fail to notice something very strange happening right before their eyes. This is because, when they are looking with a particular purpose in mind, a lot of what else goes on gets missed. This theme is revisited throughout the course – we tend to notice what we pay attention to. And if we can choose to pay attention to some different parts of our experience, including our thoughts and feelings, we will notice some interesting things about these too. The broad aim of the programme is to help children look at the world with fresh eyes – with a Beginner's Mind as some describe it in the mindfulness tradition.

What is MAP?

MAP – the Mindful Attention Programme – is an eight week course for children aged 10 to 13 years. It is a universal programme; meaning it is designed to support all children. However, it has a particular focus on anxiety and stress, so will help some children more than others, though we all experience these difficult emotions from time to time. The programme is delivered in the class room, and ideally by an appropriately prepared class room teacher who is a regular member of the school. This will ensure generalisation of the skills across school life. The programme is designed to be undertaken in eight sessions, though it is possible to extend some parts to cover a whole school term. The aim is to provide an introduction to mindfulness for children, such that the knowledge, skills and attitudes learnt can be continued by the children and the class teacher for the remainder of the school year and beyond.

You will find in this manual a programme of weekly lessons which are supplemented by short daily practices of 3-5 minutes. The children are given the opportunity of further developing their mindfulness practice at home using downloadable guided meditations. Each lesson includes a power-point, suggestions for additional activities, a children's workbook and downloadable guided meditations for use at home and/or school.

Can Mindfulness help Children? The evidence so far

Unlike a number of programmes available to children, those offering mindfulness have been shown to be highly effective in making important changes, including reducing stress, improving well-being, cultivating empathy and increasing emotional control.
More information on a large number of studies can be found at www.psychologyforchildren.com but here we will mention a few very well conducted trials.

In 2013, Raes et al. showed that a mindfulness programme delivered in 5 schools to over 500 children aged 13-20 produced significant reductions in depression, and prevented many students from developing depression 15 months later. Thus it appeared to improve the children's mood during the course. If a child started the course a little down, then doing the mindfulness course helped improve their mood. But the course also helped keep their mood from slipping downward up to 15 months later. In the control group (a similar size group of children who undertook a PSHE programme) some children may start the course feeling OK, but later develop low mood. This might be for a variety of reasons including new stressors or changes in social relations. However, children who started the mindfulness course were much less likely to later fall into lowered mood/depression.

Also in 2013, Kuyken et al. showed that a mindfulness programme can reduce stress and improve well-being in 12-16 year olds. The children thus not only showed less negative feelings, but also endorsed more positive ones. Mindfulness doesn't just help build resilience – a vital and important character skill, but it also raises children's sense of positive well being.

In 2015, Schonert-Reichl et al. worked with 99 children aged 10 and 11, a younger group. Again significant improvements were made in a number of areas including empathy, optimism, emotional control and peer rated acceptance. The children seemed to get on better with each other, show greater self-control and appeared happier.

Bringing MAP into your School

The MAP programme provides a core curriculum to enable children to begin to acquire the skills and attitudes needed to develop mindfulness for themselves. This endeavour is a great deal more successful if the children's school and family can support and encourage their progress. We recommend involving parents and arranging for ways the school can maintain and extend of the work.

An initial discussion with relevant staff on how the programme works and what it can achieve is a good start point. A power-point and information is provided to support this aim.

Ideally, teachers will have experienced mindfulness for themselves and will have accessed an introductory course on mindfulness. There are many possibilities here including locating a Mindfulness Based Cognitive Therapy (MBCT) or a Mindfulness Based Stress Reduction (MBSR) programme near you, looking at short courses on offer at your local Buddhist Centre (such centres usually offer secular courses introducing participants to the basics of mindfulness meditation), or even trying one of the online courses becoming increasingly available (e.g., Be Mindful Online at http://bemindful.co.uk/). A very good introductory text is Mindfulness: A Practical Guide to Finding Peace in a Frantic World by Mark Williams and Danny Penman. Your school's Educational Psychologist may also be able to help with further information and training. It appears likely that a good understanding and experience of mindfulness will help in order to teach this life skill (though the last study mentioned in the previous section (Schonert Reichl, 2015) achieved very good results using class room teachers who received one day's training in the programme used).

Time in the school day is precious, and with a full and demanding curriculum it can feel difficult to set aside time for another new programme. For the MAP programme to work effectively it is vital that time is planned into the timetable to enable both the eight sessions and the daily core practice to be undertaken. Once the programme is finished, time to continue the core practice will ensure the continuance and enhancement of the skills and attitudes learnt.

In addition, the children are supplied with guided meditations to download at home. The support of parents in encouraging and reminding children regarding this practice will have a substantial impact on the benefits reaped. We recommend an initial parent meeting and have provided a power-point to introduce and guide the parents through the main features of the programme. Regular letters to parents about course content and the importance of encouraging and reminding their children of the practices are also provided.

Teaching Mindfulness

Bringing mindfulness into the class room can be a challenge for a number of reasons. Firstly, as mentioned earlier, to get the best from the course you will need to set aside the time and prepare staff and parents. Why do all this? Here is one of the same concerns that may strike the children. Why are we doing this? A clear rationale needs to be in place for people to readily agree to invest in it. And given some popular ideas prevalent about meditation, this rationale also needs to fend off a few common myths about what we might be doing on this course. Developing the skills and attitudes that make up mindfulness will enable children to notice more, learn about how they react to everyday situations, especially emotional ones, and then give them the space and time to respond more helpfully and with flexibility. Session 1 is largely devoted to providing a little of this rationale.

A second thing to acknowledge when delivering a mindfulness programme is the open and investigative nature of the learning experience. The children are being asked to notice some quite subtle phenomena – small sensations in their body, changes of mood. To do this a class room environment that is relaxed, open and at times very still is needed. The sessions contain a number of fun activities which will hopefully be met with enthusiasm. However, at times during each session it is important to build toward a still and peaceful class room environment. Slowing down the session and gently encouraging silence are vital. Sessions will involve silent meditations for up to 5 minutes. Being comfortable with this and judging how long the children can manage are important skills to develop. Along with the silence, the children are being asked to offer up whatever they make of these experiences – including some experiences which are deliberately difficult in some way (e.g., frustrating, boring). The usual class room exchange between teacher and pupil is often constructed around the idea that the teacher knows the answer, and the child is there to learn this from them. In the MAP programme there are some elements of the curriculum which the teacher may know well, but alongside these are the experiences of the children themselves and here open-ness, variability and uncertainty are much more common. Communicating this attitude of, ‘I don’t know.’ is important, and fits with the idea of Beginner’s Mind mentioned earlier.

MAP: an overview of the course

The course consists of eight sessions to be taught weekly over a term.

Session 1 introduces the children to the idea of 'attention' and shows them how easily one can miss something obvious. The topic then shifts to how 'attention' can interfere with performing well, especially when emotions are present. Simple examples of mindfulness of the body are to begin the idea of focusing attention

Session 2 focuses on the body and asks the children to notice simple sensations in different parts of the body. The core practice of mindfulness of breath is introduced and the children get their first guided meditation download – the Body Scan

Session 3 looks at sounds. The children will use sound both as a focus and to begin to notice the background of other sounds and of mood. A Mindfulness of Sounds guided meditation is given and over the next few sessions the core practice is extended in length.

Session 4 introduces judgment and it pervasive effects on our experience. In particular our liking and disliking some items of experience is investigated.

Session 5 places a spotlight on thinking. In this session the children learn a little about 'letting thoughts go' and how hard (and unhelpful) it is to suppress thoughts. The emphasis is now shifting from focused meditation to include noticing but not being absorbed by other material (e.g., mind wandering).

Session 6 continues with the theme of dealing with thoughts and extends this to worry. Recognising some thoughts as exaggerated or distorted and noticing when we tend to worry.

Session 7 asks the children to notice their feelings explicitly and to tolerate these in the face of difficulty. Moving toward challenges and being able to accept difficulty are encouraged.

Session 8 provides an opportunity to sum up all they have learnt and how they might apply this to upcoming challenges. The children celebrate their efforts and describe what mindfulness is for them now.

MAP 1

See What You're Missing!

Objectives:

In ***this session***

- The children will see how some things grab their attention, and how easy it is to be distracted.
- The children will see how they can *miss* out on things if they are not focused, and if they are.
- They will find out a little about MINDFULNESS

The introductory session aims to generate curiosity and set the tone for future sessions. As mentioned earlier, the teaching is best done in an open and exploratory way. The initial you-tube video clip presents a well-known psychology experiment on Selective Attention. The item shows that if you are focused on one aspect of the scene – counting the number of passes – then you can readily miss another aspect of the same scene; a moonwalking bear. Discussion with the children readily brings out the counting task as the reason for missing the dancing bear (along with its colour). Further points may come out, though at this stage need not. The act of counting – an activity, a doing – may interfere with just 'simply observing'. Furthermore, we might touch on the related fact that we see what we are looking for. What we notice may sometimes depend on what we *usually* look for. And so what we miss may be the things we do not usually look for, or perhaps consider as less important at that time.

From here the children can then complete the short written exercises asking them what they typically notice, and what usually distracts them. Noticing what they see on the way to school can then be set as a first homework task or project.

The children then see the penalty shoot-out errors clip and again whole class speculation as to the reasons can take place. The key question is: What could have distracted these expert penalty shooters? A range of thoughts and feelings might be considered here, and then we might ask if this ever happens to the children themselves. What might help them stay focused and not succumb to such emotional distraction? At this point, the use of meditation by some well-known figures can be highlighted and briefly discussed.

At this point it is useful to slow down the pace of the teaching as we move into the first mindfulness exercises. The children are asked to focus their attention on their own breath for three breaths, and then ten breaths. If you feel they are capable, then a one minute mindfulness of breath can be attempted.

Mindfulness of breath can be tried in a number of ways. On this occasion, where a very tight focus is the aim, then the children can be asked to attend to the breath at the nose. Noticing any small detail – such as the breath being cool on entry, where it hits the nostrils or if there is a gap between in and out breath. Distractors can be discussed.

A simple definition of mindfulness sis then offered and the children have the opportunity for two more brief formal mindfulness exercises around the body. Firstly, the children clap their hands and try to notice when the tingling sensations stop. Discussion of some tingling that may 'already be there' may come up and is useful. Finally, the children practice a standing mindfulness of the body exercise. The children are guided to attend to different parts of their bodies including their feet, legs, arms, and face; finishing with a return to the breath.

Homework is outlined and there are some optional additional exercises the children might like to try over the course of the week.Homework Practice: To spot the dancing bear and to notice something new on the way to school.

Activity and Instructions	**Time required**
Outline the session goals and show the 'Dancing Bear' clip. Discuss what they commonly notice and miss.	10 minutes
Show the 'Penalty Miss' clip and discuss the factors affecting the footballers performance. Discuss the 'famous meditators' and how mindfulness meditation might help them with their work.	10 minutes
Introduce the first formal mindfulness exercises around the breath and discuss distractor. Provide the first simple definition of mindfulness.	5 minutes
Finish with mindfulness of the body exercises – the hand clap and standing meditation.	10 minutes
Discuss the 'homework exercises – to spot the dancing bear, and to see if they can notice something new on the way to school.	5 minutes

MAP 2

A closer look: Mindfulness of the body

Objectives:

- In ***this session***
- We will practice DELIBERATELY looking closely at things.
- We will pay close attention to our bodies ***from inside*** and out.

This session aims to generate curiosity about simple bodily sensations and to help the children begin to realise that there is a constant flow of inner sensations if they direct their attention at them.

The core practice of mindfulness of breath is also introduced. This was attempted in the last session with 3 Mindful Breaths, but is now explicitly formulated as a regular practice. The children will be asked to focus on their breath 2-3 times per day – probably after break times in the morning and after lunch, depending on the organization of the school day. The core practice is essential, though will often initially be met with some uncertainty, possibly giggling, restlessness and embarrassment. It is important for the teacher to note their own reactions to tolerating this bit of silence, and where possible gently encouraging yourself to extend it that bit further. Over the coming weeks the expectation will be that most children will be able to manage 3-4 minutes of mindfulness of breath. A guided meditation is available to download, but a script is also given which will hopefully be the main method as the course progresses.

At the beginning of each lesson the previous sessions homework is raised and discussed briefly. This is important in ensuring these home activities are a valued and integral part of the course. Obstacles and confusions can also be dealt with, and suitable encouragement given.

Another selective attention video clip is then shown to rouse the children's curiosity and remind them of the intriguing nature of human attention. The finger print slides are then presented in order to emphasise the idea of looking very closely, and that when we do look closely we might notice that things look a little different.

The focus is then explicitly drawn to the INSIDE of the body (unlike the finger print) and an investigation of this.

The core practice is then undertaken. For this session it is usually best to try 10 mindful breaths and then a one minute mindfulness of breath exercise. A focus on breathing at the nose might be useful. The children can also be introduced to some simple counting or 'noting' whilst they breathe. This can be done in a number of

ways. I often ask the children to say ‘Breathing In’ on the in-breath (silently ‘in their head’), and ‘Breathing Out’ on the out-breath. Or they may simply count (‘1-2-3..’) as they breathe in, and then again as they breathe out (again ‘in their head’). It is important for them to be clear that they are being asked to try to observe their breath as closely as possible, and not to be deliberately altering their breathing. The aim is to observe. Some may think they are trying to relax, or to breathe in a special deep way, or some such goal. Gentle encouragement around noticing their breath ‘just as it is’, is key over the next few weeks. I usually use a Singing Bowl (a metal bowl than can be chimed and produces a long resonant ringing sound) to signal the beginning and end of the breath meditation. Anything which produces a sound of some length could be used, though the children often like the singing bowl. They can take turns in ringing it and a register can be kept of daily practices. It is perhaps worth noting that the Schonert–Reichl study mentioned above used a daily breath practice (3 minutes for three times a day) and this may well be a primary reason for the success of this programme. The core practice is an essential part of the programme and needs to be encouraged, discussed and developed as far as possible during the eight sessions.

The children then have a chance to explore what it would be like to have a robot’s body; a body made of metal. What would they miss? Would there be some advantages? Some disadvantages? The children can draw their ideal robotic body, discuss this scenario in pairs and then record their responses in the workbook.

The latter half of the session is again given over to more formal meditation exercises. The children are being asked to notice their inner sensations and as such it can help to make these more noticeable, or ‘louder’. In the first exercise they run for a minute and then try to notice sensations in their body – breathing, heart rate, muscle ache, tingling, heat, etc. As with the hand clap exercise, the children can be asked to try to notice when their sensations ‘return to normal’. You may ask them what they notice prior to running – the ‘normal’ relaxed state, in order to later compare with the post-running state.

The children are then asked to notice sensations when they stand still with eyes shut, and whilst they stretch their arm up or roll their head (ensuring they take care not to get too dizzy). These movements need to be slow with a focus on the body part as it is moved (e.g., at their arm and hand as it rises up for the stretch). After the excitement of running it is important to slow down the movements and to gently quieten the mood, so that small sensations (and distractions) may be noticed.

The session is then finished with a seated Body Scan. This should last 3-4 minutes (longer if you feel the children can cope). Not all parts of the body can be focused on, but feet on the floor, bottom on the seat, breathing and face could all be worked through. Discussion of which parts they noticed and which produced less sensations can be discussed (noting that it is fine to not feel much sensation in some parts of the body, and that this may vary across individuals). Discussion might also reflect on what distracted the children – thoughts, sounds, feelings, etc.

The week's homework is then outlined and there are some optional additional exercises the children might like to try over the course of the week.

Homework Practice: To practice the Body Scan – ideally every evening before they go to sleep. This meditation is available as a download for the children. Again emphasis is placed on trying to just notice what sensations arise, rather than, say, trying to relax. However, this can be practiced at the children's bed-time, and if they fall asleep during the Body Scan, then that's fine. The relaxing nature of this meditation is quite intrinsically motivating for some children, and asking them to do something that can perhaps easily be slotted into the bed-time routine, makes it a good start point.

Activity and Instructions	**Time required**
Outline the session goals, review the homework exercises and show the 'Card Trick' clip.	10 minutes
The children look at the finger print slides and then close observation of their own hands.	5 minutes
The core practice – mindfulness of breath - introduced and discussed.	5 minutes
Discussion and work on the Robot body.	10 minutes
Formal meditation exercises focused on the body.	10 minutes
Discuss the homework exercise – the Body Scan and encourage recording of their attempts.	5 minutes

MAP 3

Are you listening carefully?

Objectives:

- In ***this session***
- We will look at deliberately paying attention to sounds.
- We will try to notice the focus of our attention, and sometimes also what is **in the BACKGROUND**.

The session aims to use sound as a new focus, but to also help the children see that there is always a background too – and that this can have important effects. Items in the background might act as distractors and they might also affect our mood.

As in all sessions now, the home practice is discussed. This session follows the first guided meditation home practice – the Body Scan. It is thus really useful at this point to spend some time discussing this with the class. Discussion might touch on how some of the children experienced it. All views – positive and negative – should be welcomed. Obstacles need to be discussed and where possible the children may be helped to overcome simple practical difficulties or misunderstandings. In general, most children find the Body Scan relaxing. This positive aspect can be highlighted and perhaps used to encourage some who may not have tried. The main purpose of the Body Scan is not relaxation. However, this feeling is usually a good intrinsic motivator in the early stages, and so worth emphasizing. Negative feelings need to be acknowledged (e.g., boredom restlessness). Asking if this was 'always there', or it varied at all, can help subtly bring in the theme of constant change, and trying to maintain some curiosity in the face of difficulty. This is dealt with more later on, so may not be worth dwelling on too much at this stage for this age group.

The core practice is then undertaken. This time you might go straight to a 1-2 minute mindfulness of the breath.

The children are then shown a visual illusion. If the children focus on one dot presented on the screen, they will notice the other two dots disappear. A focus on one area, seems to make the background disappear. Comparison with our previous two clips can be made.

The Flanker Task is then introduced. This is another classic psychology task. In this version, little green racing cars are presented in a line – always an odd number. The children are to focus on the central figure. If this car is facing right, then the children are asked to raise their right hand. If the central figure if facing left, then they are to raise their left hand. Sometimes all the figures are facing the same way (as on the first slide), and sometimes the central figure faces in the opposite direction to the

surrounding cars. Nevertheless, as best they can the children are to respond only to the direction of the central figure. The slides are presented in *rapid* succession. After the task, the children are then asked how it went and which slides were easier or harder. Most, but not all, will report that the slides with more cars on were harder to respond to as quickly. A further discussion of distraction may be had.

These two visual examples of focus and background provide the opener into *listening* to focus and background. Ask the children to listen to the piece of music given. Initially they are asked to listen to what different instruments are being played. Having named most or all of them, the children are then asked to listen again. However, this time they are asked to focus on just one instrument – to follow this one closely and to wait for it to return if it stops playing briefly. The music is then played for a minute or two, and the children can then discuss which instrument they chose, and how they found the exercise. As well as discussing the focus, the children might be asked about the background and the effect of the music on their mood.

The cartoon clip that follows provides a stimulus for a discussion around silence. How do the children feel about silence? In particular, they are asked to think about when they like lots of noise, and when they like some quiet. Links to the importance of silence in session can also be made, and how this helps with the guided meditations.

The session ends with a Sound Scan. The children are settled with an initial focus on the breath, and then asked to listen out for sounds around them; to listen to the quality of the sounds as carefully as possible. The children can be asked to try to notice 10 different sounds – in the room, outside the room, from the playground, or even sounds within themselves (e.g., their breathing).

The homework is then outlined and this week includes a Sound Scan guided meditation and listening to a piece of music mindfully. The Sound Scan can be undertaken at the end of the day (as with the Body Scan), but it might be suggested that they try at least once to have a go sitting in a comfy chair at home. They might also try the sound scan after break-times on occasion instead of mindfulness of breath. There are some optional additional exercises the children might like to try over the course of the week.

Activity and Instructions	Time required
Outline the session goals, review the homework and carry out the core practice.	10 minutes
Show the visual illusion clip and discuss. Present the children with the Flanker task and discuss.	10 minutes
Play the music for the focused listening exercise, asking the children to spot the instruments. Then repeat with the children having chosen an instrument to focus on. Discuss.	10 minutes
Finish with a Sound Scan	5 minutes
Discuss the 'homework exercises – to listen to a piece of music mindfully and to try the Sound Scan guided meditation.	5 minutes

MAP 4

Yuk, Wow and OMG

Objectives:

- In ***this session***
- We will look at our judgments of liking and dis**liking** things
- We will see how liking something affects what we notice

This session explicitly introduces the children to a further part of the nature of mindfulness. Earlier we described mindfulness as paying attention to what is happening right now ***with curiosity and kindness.*** Bringing children's attention to the judgments that we often bring to our experiences shines a light on this latter aspect of mindfulness.

The core practice is undertaken first. You might introduce the idea of the mindfulness of the breath as a punctuation point, a 'breather' before you shift to a new topic. This activity can be around 2-3 minutes in length.

The homework can then be discussed and obstacles/difficulties talked through.

The children are then asked to rate their mood. Suggestions can be given for mood words and the scale can be used to give an overall sense of happiness. We are beginning to point the children's attention toward their own feelings a little and normalizing this.

The children are then asked to view a set of slides with' emotive' images on. Each slide is shown for around 30s. They are asked to fill in a box for each item presented. The children are to write down their first *Reaction.* This could be a thought (e.g., 'tasty' or an exclamation such as, 'Yuk'.) or an emotion (e.g., 'disgusted').

You may wish to gently point out some of their physical reactions such as changes of posture, pulling faces, laughing or smiling as they view the slides. Perhaps also note their urge to vocalize whether exclamations like 'Wow' or talking to their neighbor about the image presented. The children are asked to look through their responses and try to decide whether they involved description, or were more about liking/disliking the image (a judgment).

The children then try a mindful eating exercise. They are each given a Malteser, which they are to place on the desk in front of them (an alternative can be offered for those who dislike Maltesers or have allergies). The children are asked to first look at the Malteser – holding it up to the light and inspecting it closely. They might also

notice how it feels in their fingers and if they feel any melting. The children are then allowed to smell the chocolate. Finally, they can put it in their mouths. However, the instruction here is to place it on the tongue and NOT to chew. They must try as best they can to let the chocolate melt in their mouths and notice the sensations in their mouths, on their tongue, and so on. After a minute or so, they can be offered the opportunity to chew the remaining sweet. Even after they have swallowed they can try to notice any remaining sensations.

Ideally this exercise should be conducted with all the children eating at the same time, and in relative silence. In general, children are understandably excited to be able to eat chocolate in class. This needs to be acknowledged, and the thoughts and feelings voiced throughout the exercise by the teacher. But gentle encouragement to try to focus all their attention on the sweet needs to be repeated. The children can then fill in the record form in their workbook.

The eating exercise can serve a number of purposes. In adult programmes it is often used to point out how we miss much of what happens and the transformation that occurs when we bring our attention to a simple phenomenon. These features can be pointed out here too, but in this session context, the use of judgment terms and the experiences of liking/disliking, of expectations and urges should be highlighted. These powerful 'background' phenomena are an important part of our relationship to many experiences.

The final brief exercise asks the children to remember the images shown earlier. This should enable an obvious point to be highlighted – that the images that were emotional powerful for a particular child were remembered. Our liking and disliking will affect our memory (as well as our current perception).

The children are then given their homework tasks. This includes a mindful eating exercise – or at least eating one mouthful of a meal mindfully - and a choice this time of Mindfulness of Sounds or the Body Scan (or any combination of both over the week).

Activity and Instructions	Time required
Outline the session goals, carry out the core practice and review the homework.	10 minutes
The children rate their mood using the scale and then undertake the reactivity exercise with the 12 images.	10 minutes
Mindful eating of a Malteser and recording of their reactions	15 minutes
Remembering the images and discuss the ‘homework exercises – to eat one thing mindfully and to choose either or both of the Body Scan or the Sound Scan.	5 minutes

MAP 5

I think I'm thinking?

Objectives:

In ***this session***

- We will focus our attention on our thoughts
- We will see what happens when we try to stop them and how we might just let them float by

This session brings the phenomenon of thinking under mindful scrutiny. However, the instruction here is to '*let thoughts go'*, and this is quite a departure from previous weeks where the goal involved focusing and then *maintaining* attention on a particular phenomenon (e.g., the breath or sounds). To help draw a contrast, and to support the children's understanding of the programme so far, the session includes a brief recap after the initial introduction and homework check. The core practice is not undertaken in this session (though should be done at other times in the day if possible, as usual). There are a number of short meditations in this session, and adding the core practice can seem an overload for many children. The recap reminds the children of the things we have tried to focus our attention on, and in the last session, how we felt about the object of interest. Both aspects will be of relevance in this session.

Having introduced the idea of thoughts as today's focus, the children are asked to tick a box each time their mind wanders during the remainder of the session. The aim is to notice that your mind wanders, rather than to stop it wandering. Hopefully the majority of the children will get a better idea as to how busy the mind always is.

Two activities follow which also hope to show the busy nature of the mind. The first task is a word association game. The children are asked to record the first word that springs to mind when given a cue word. The children may note that it is easy to come up with an associated thought, though these will vary across the class. You might also remind the children of the judgment component of some of these associated thoughts.

Secondly, the children are asked to undertake another classic psychology experiment – the White Bear Thought Suppression task. Here the children are asked NOT to think of a white bear. Show the white bear slide and repeat the instruction 2-3 times, then give them one minute with their eyes shut, trying NOT to think of a white bear. Many children immediately grasp that this will be tricky. Gather responses at the end about how it went. Some will succeed, or claim to. It is helpful to ask HOW they

succeeded (e.g., thinking of something else) and to inquire about the effortful-ness of trying NOT to think of the white bear.

Hopefully, through these first two tasks you can make the case that a) the mind is busy, and that b) it is hard to just stop it or suppress thoughts outright. This can be bolstered by a brief outline of the myth of the Oddyseus and the Sirens. Oddyseus, we are told, wants to hear the beautiful singing of the Sirens, but knows that when sailors do so, they are then dragged to their own death by the Sirens (sometimes portrayed, as they are here, as winged creatures, and sometimes as mermaids - as in the recent Pirates of the Caribbean movie). The voice moves you against your will, but is perilous. To avoid this fate, Oddyseus has his crew tie him to the mast, and agree not to release him however much he begs. The analogy to be drawn here is with the pulling power of thoughts, especially emotional ones (good or bad). It was hard NOT to think of the white bear, it seemed to drag us back to it. Trying not to think can be unproductive, as the next slides show.

The children then try the White bear task again and simply note each time the bear springs to mind. This is followed by a Mindfulness of Thoughts task involving spoken stimulus words. The children will need to initially focus on their breath for a minute to steady their concentration, and the teacher can then offer up random words (potatoes, TV, school etc.) and the children are asked to just note the word, notice any associated thought if it arises, and then 'let the thought go'.

Check on how often the children's mind's wandered and discuss.

The homework is then outlined. The children can try to spot their mind wandering in two lessons during the week – perhaps one they like, and one they are less interested in. There is a guided meditation for Mindfulness of Sounds and Thoughts this week. Whilst the children may still listen to the downloads in bed, trying the guided meditations sitting upright in a comfortable chair can also be encouraged – and comparisons made. Again, there are some optional additional exercises the children might like to try over the course of the week. These include the classic Digit Span test (forwards and backwards) and a version of Consequences – a game showing how associations are readily made and the contributions produce quite a rambling, and sometimes entertaining, whole.

Activity and Instructions	Time required
Outline the session goals and review the homework. Recap the first four sessions in brief. Present the Mind Wandering task.	10 minutes
Word Association and White bear Suppression tasks.	10 minutes
Myth of Odysseus and the Sirens. The return of the White Bear task.	10 minutes
Mindfulness of Thoughts – Potatoes, TV and School.	5 minutes
Discuss the 'homework exercises – the Mind Wandering task and the Sounds and Thoughts guided meditation.	5 minutes

MAP 6

Worried about worry?

Objectives:

In ***this session***

- We will look at worry: when it happens and how it can make us feel worse.
- We will try to let our worrying thoughts go….

This session continues on the theme of thoughts, but this time with a focus on negative or worrying thoughts. The qualities of such worrisome thinking are presented, when they might arise and how they often make us feel. The children will have opportunities to practice letting such thoughts go.

The homework is reviewed and the core practice is undertaken.

The children then view a clip from Kung Fu Panda. The film charts the story of Po, a panda who has always wanted to be a Kung Fu warrior, but up to now has only ever worked in a noodle bar with his dad. By chance he stumbles into an ancient ritual to decide the next Dragon Warrior – the ultimate Kung Fu master; and in a twist of fate, is himself chosen to be the Dragon Warrior. To achieve this, he is sent to the Jade Palace, a Kung Fu school. At the Jade Palace there are already five creatures, including a tigress, a praying mantis and a snake, who are already highly skilled in the art of Kung Fu. Po's first day at the school does not go well – perhaps understandably – and he falls over, gets knocked around and fails to master the beginner's tasks. The clip shown joins Po after this difficult first day. We see him brooding and ruminating alone under the Peach Tree of Heavenly Wisdom. He is disconsolate. He is then joined by Oogway, the wise tortoise.

The clip includes a number of very relevant themes. These are explored a little on the next slide and can hopefully be drawn out in conversation with the children. Firstly, Po's thinking is very negative and contains some typical hallmarks of such thinking – exaggeration (e.g., 'I suck more than anyone in the history of China') and inaccurate guesses at other thoughts and feelings ('They all hate me'). It is these thoughts that contribute to his low mood. Going over these thoughts repeatedly (rumination) will keep him in this mood (and he appears to be doing this by going off on his own). Thus his thoughts link to his low mood, and in turn this is linked to his behaviours – going off alone, comfort eating.

There are many things one might say about this clip, but the main teaching point for this session relates to the extreme or exaggerated nature of Po's worrisome thoughts.

When we are emotional our thinking can often be extreme or exaggerated. The children then view some typical examples of extreme thinking taken from a commonly used children's questionnaire. It is helpful if the teacher can normalize these thoughts by describing a time when they may have thought this way. Again the link to negative emotion can be emphasized. The point can also be made that for many of us, the thought occurs rapidly or automatically, and can disappear just as quickly – leading us to feel better again. However, if we *kept* thinking these negative thoughts then we would *keep feeling upset*.

The children then see the Charlie Brown clip. Prior to the clip, the children are asked to see if they can spot any extreme negative thoughts. A little background about Charlie Brown may be needed – his tendency to view himself negatively and his struggles at school. You might point out that Lucy knows Charlie, but does not always help him – as we see in this clip.

The children can then be reminded of the Siren story, and how emotional thoughts can be like Sirens – whether exciting thoughts (such as on Xmas Eve) or sad thoughts (like Charlie or Po's). They can seem hard to shake off and can lure you into thinking about them for a long time. You may then ask the children what they might say to themselves, or remind themselves, in order to help them leave those negative thoughts alone. The children may propose some rather rose-tinted statements, such as, 'It will all be fine'. If so, gently remind the children that we are just trying to help Charlie let go of these thoughts. So, 'They are only thoughts', or, 'Let's forget about this for now.' might be more appropriate. The next slides comparing selecting thoughts with selecting sweets follow the same theme. We would normally *choose* which sweets we like, and leave the ones we don't. We are trying to learn how to do the same thing with thoughts – leaving the negatives, if we wish. The children can then think about a simple phrase they might use to remind them to let the thought go, if they wish.

We finish with a mindfulness of thoughts exercise akin to the example in the previous session. The children begin with a steady focus on the breath to anchor them, and then will be asked to listen out for stimulus words. These may generate associations. The children are asked to spot any associated thought that comes along and then 'to let it go'. Remind the children we are not pushing the thoughts away (like the White Bear suppression task), but just letting them go. In this exercise, we begin with neutral words (e.g., potatoes), move onto negative words (e.g., 'fail', 'argument' , 'loser') and finish on positive words ('party', 'holiday', 'ice cream'). The children can briefly discuss how this went.

The homework for this week asks the children to try two things. Firstly, they are to see if they notice any extreme thoughts they have this week (or perhaps notice others saying, or even ones they might spot in a TV programme or movie). Secondly, they are to continue with the Sounds and Thoughts Meditation.

Activity and Instructions	Time required
Outline the session goals, carry out the core practice and review the homework.	10 minutes
Look at the Kung Fu Panda clip, discuss the distorted nature of emotional thinking and review the items form the Children's Automatic Thoughts questionnaire.	15 minutes
Look at the Charlie Brown clip, reviewing Charlie's extreme thoughts. Present and discuss the metaphors of choosing sweets/thoughts and the myth of the Sirens.	10 minutes
Undertake the Mindfulness of Thoughts exercise, relating this to the previous discussions and examples.	5 minutes
Discuss the 'homework exercises – to spot extreme thoughts during the week and to try the Sounds and Thoughts guided meditation.	5 minutes

MAP 7

I can't stand it… or can I?

Objectives:

In ***this session***

- We will experience things we may not like so much… and see how we **think** and **feel.**
- We will try to just notice what's there as best we can – especially how our body feels.

This session aims to consolidate the learning from the previous two sessions on letting thoughts go. Session 5 asked the children to 'let thoughts go', rather than suppress them. Session 6 showed the children some features of emotional thinking, and emphasized how this can draw us in, and thus make it harder to 'let them go'. In session 7, we ask the children to 'face the difficult'. They are asked to notice what happens when they experience mild discomfort – such as hearing loud sounds or trying to complete a frustrating puzzle. They are being asked to notice their mild reactions of surprise, aversion and so on. These 'difficulties' might lead them to think and react, but as best they can they are to return to notice their experiences, perhaps returning to the sensations, rather than wandering into *thinking about* the experience, judging it or rejecting it. They may be asked to re-focus on their breath and body to help them 'stay with it' as it were.

The homework is reviewed but the core practice is not undertaken at this point as the session contains a number of other meditations. The children are asked to fill in the mood scale as they did in session 4 – rating how stressed they feel right now.

The children are asked to try a meditation on the breath, akin to the core practice. However, after the first minute or so, when they have settled a little, a number of loud sounds are played. The children can then briefly discuss the range of reactions they experienced in response to the sounds (body movements, changes in facial expression, thoughts and feelings). They can try the longer sound track – the buzzing sound of insects. Again, they will need to settle a little before the sound is played. The children are asked to notice their reactions, and this time, as the sound is sustained, to 'stay with it', and also notice any change in their reactions over time. The teaching point here, in part, is that they may notice a thought that they do not like the sound, or a feeling of dissatisfaction, and this may pre-dominate. But with some persistence they are asked to explore this openly, to stay close to and observant of the sensations they notice in their bodies, rather than being carried off by their 'reactions' (i.e., more negative thoughts and attitudes).

The children then work on the Maze task. They are each given a small plastic ball maze. They are instructed to try to complete the maze but also to notice how their feelings change as they work on it. The children can be asked to fill in the mood scale each 30s/1 min (with a 1 for the first 30s, and 2 for the second 30s and so on). You might explain that we are trying to notice the 'background' mood, as well as focus on the 'foreground' task. Again fluctuations in mood can be highlighted, if possible; that our feelings change constantly, and sometimes quite rapidly. Feelings of boredom and frustration can be acknowledged, and we can gently encourage ourselves to stay with it.

We finish on the mindfulness of sounds again – and you may use some of the sound clips previously given. This time, the gaps between the sounds are increased. The potential frustration here is 'boredom/uncertainty' as the gaps get longer. The children should be informed of this prior to the exercise so they can pay close attention to their reactions to these gaps – thoughts, feelings, body movements, restlessness/fatigue. As before they should begin by settling on the breath, and can be instructed/reminded to return to the breath between sounds, or if they feel particularly restless/bored.

The homework for this week asks the children to try two things. Firstly, they can try *either the Facing the Difficult* meditation once more at home. *Or they can try Worry Time*. The children are to choose one day on which to try this. On that day they are to choose a time of day (usually early evening, but not just before bed-time) when they are to worry as much as they can. They can also if they wish write down these worries – just a word or two. *The worry time is to last for 5 minutes only*. During the rest of the day they are to try to spot if they start worrying, and then to defer this worry if they can until worry time. They may say to themselves, 'I'll leave this worrying until my 'official' Worry Time'. Sometimes this might be easy, and at others it may take a while. As with the instructions in the guided meditations, the children are just to do the best they can. If the worrying thoughts return, then as best they can, let the thoughts go, and remind themselves they can think about this at worry time. They may try to re-engage in something more present tense focused – an enjoyable activity or a conversation. But importantly, be kind to themselves and just acknowledge that it's sometimes tricky to let a worrying thought go.

Secondly, they are to return to the Body Scan Meditation and try to practice this on the remaining days of the week.

Activity and Instructions	Time required
Outline the session goals, review the homework and ask the children rate their mood using the scale.	10 minutes
Work through the Loud Sounds and Buzzing Flies Sound meditations	10 minutes
Undertake the Maze task as a whole class focusing on being mindful of frustration/boredom and its expression in the body.	10 minutes
Finish with a further mindfulness of sounds exercise – increasing the gaps between sounds.	10 minutes
Discuss the ‘homework exercises – Worry Time and Facing the Yuk/Body Scan.	5 minute

MAP 8

Looking forward to life's roller coaster

Objectives:

In ***this session***

- We will look at **all** we've learned and see how we can use it to help us with the ups and downs of life.

This session aims to sum up all the children have done over the last seven weeks and to celebrate their successes and help them reflect on some of the most important things they have learnt.

The homework is reviewed and the core practice is undertaken. The Worry Time homework exercise aims to show, that at least some of the time, the children can learn to spot when they are worrying and can defer it, getting back on with something else for the present. Many may also note that trying to worry in the 5 minute Worry Time is strange. Many may not feel worried at all. It may feel a little silly even to try to worry. This emphasizes the *automatic* nature of worry – that it usually creeps up on us and grabs us. When we actually try effort-fully to worry it does not feel the same. The programme has often been aimed at noticing these automatic reactions and learning to respond in a different way when possible.

The slides covering some of the main elements of the programme are then viewed and discussed together, using appropriate questioning, reminding and shared reflections. This is a chance to emphasize the arc of the programme from focused meditations, to more open exploration of the background including trickier items such as our feelings, judgments and thoughts. The children can discuss in pairs and record what they particularly enjoyed and what they found difficult. A definition of mindfulness can then be reflected upon.

The children will then try two exercises which include some stimuli which may be seen as pleasant and some that are unpleasant. In each case the Aim is to simply notice our reactions and stay with the focus as best they can. In the first exercise, the children are again given sounds to listen to. Collect a range of instruments from the school's music collection. Some will produce 'pleasant' sounds, and others can be made to produce 'unpleasant' sounds – particularly loud percussive instruments. The children start with mindfulness of the breath to steady themselves for around 30s, and then different instruments played, and reactions noted.

The second exercise brings a return to mindful eating. This time the children are to examine the chocolate (or other sweet), sniff it, and then put it down. They are asked to then try a mindfulness of the breath exercise with the chocolate placed in front of

them on their desk. Each time their mind wanders to the chocolate, they are to congratulate themselves for spotting this, and as best they can, try to return their attention back to their breath. After around 2-3 minutes of this exercise, the children can then eat the chocolate mindfully, as they did in session 4 – all the time noting their reactions and just trying to be as observant as possible of all its sensory qualities.

The children can then finish the Mindful Quiz with the questions on how they would describe mindfulness and what they would do if they were anxious; then a final sum up and congratulations.The children can design a poster to advertise the next mindfulness course of they wish.

Activity and Instructions	**Time required**
Outline the session goals, review the homework and undertake the core practice.	10 minutes
Review the programme, discussing elements the children enjoyed and/or found difficult.	10 minutes
Mindfulness of Noise	5 minutes
Mindfulness of chocolate	10 minutes
Finish the Mindful Quiz and sum up. After the session the children might like to design a poster advertising the next mindfulness course in the school.	5 minutes

K. Fidelity Checklist

Fidelity of Implementation

Class: Week:

Dosage

Programme administrator to complete a register at the start of each session.

Adherence

This refers to the extent to which the programme manual is followed. Please rate the session on the following scale:

1 2 3 4 5

1 = did not follow the PowerPoint slides
2 = followed around 25% of the PowerPoint slides
3 = followed half of the PowerPoint slides (50%)
4 = followed around 75% of the PowerPoint slides
5 = followed all of the PowerPoint slides

Adaptations

If you gave a response of 4 or below in the "adherence" section, please explain the Adaptations that you made:

Changed activity structure ☐

Changed instructions ☐

Added or removed steps to an activity ☐

Added or removed questions asked of students ☐

Added or removed examples or stories ☐

Other (please specify): _____

Student Engagement

Please rate the student engagement on the following scale:

1 2 3 4 5

1 = poor engagement defined as having to "pry" responses out of children; children taking a long time to follow instructions; children becoming disruptive through disengagement

5 = high engagement defined as children freely offering answers to questions; children showing full attention to the task; children offering constructive comments that demonstrate listening and engagement

L. Ethics Application and Approval Letter

SECTION A	APPLICATION DETAILS

A1	**Project Title:** What is the impact of a universal mindfulness intervention on the anxiety levels of children in Year 5?	
	Date of Submission: 18/8/14	Proposed Start Date: 1/11/14
	UCL Ethics Project ID Number: 6007/001	Proposed End Date: 31/8/15
	If this is an application for classroom research as distinct from independent study courses, please provide the following additional details:	
	Course Title: Doctorate in Educational and Child Psychology	Course Number: DDYPSYSECP06

A2	**Principal Researcher** *Please note that a student – undergraduate, postgraduate or research postgraduate cannot be the Principal Researcher for Ethics purposes.*	
	Full Name: Dr. Sandra Dunsmuir	Position Held: Course Co-Director UCL & Honorary Senior Educational Psychologist, Reading.
	Address:	Email:
		Telephone:
		Fax:

Declaration To be Signed by the Principal Researcher

- I have met with and advised the student on the ethical aspects of this project design *(applicable only if the Principal Researcher is not also the Applicant).*
- I understand that it is a UCL requirement for both students & staff researchers to undergo Disclosure and Barring Service (DBS) Checks when working in controlled or regulated activity with children, young people or vulnerable adults. The required DBS Check Disclosure Number(s) is: 001413824672
- I have obtained approval from the UCL Data Protection Officer stating that the research project is compliant with the Data Protection Act 1998. My Data Protection Registration Number is: Z6364106/2014/07/22
- I am satisfied that the research complies with current professional, departmental and university guidelines including UCL's Risk Assessment Procedures and insurance arrangements.
- I undertake to complete and submit the 'Continuing Review Approval Form' on an annual basis to the UCL Research Ethics Committee.
- I will ensure that changes in approved research protocols are reported promptly and are not initiated without approval by the UCL Research Ethics Committee, except when necessary to eliminate apparent immediate hazards to the participant.
- I will ensure that all adverse or unforeseen problems arising from the research project are reported in a timely fashion to the UCL Research Ethics Committee.
- I will undertake to provide notification when the study is complete and if it fails to start or is abandoned.

	Applicant(s) Details *(if Applicant is not the Principal Researcher e.g. student details):*	
	Full Name: Miss Amy Phipps	
	Position Held: Trainee Educational Psychologist (UCL)	
	Address:	Email:
		Telephone:
		Fax:
	Full Name:	
	Position Held:	
	Address:	Email:
		Telephone:
		Fax:

A4 **Sponsor/ Other Organisations Involved and Funding**

a) Sponsor: ☐ **UCL** ☐ **Other institution**
If your project is sponsored by an institution other than UCL please provide details:

Greenwich Local Authority and Harrow Local Authority

b) Other Organisations: If your study involves another organisation, please provide details. *Evidence that the relevant authority has given permission should be attached or confirmation provided that this will be available upon request.*

c) Funding: What are the sources of funding for this study and will the study result in financial payment or payment in kind to the department or College? *If study is funded solely by UCL this should be stated, the section should not be left blank.*

A5 **Signature of Head of Department or Chair of the Departmental Ethics Committee**
(This must not be the same signature as the Principal Researcher)

I have discussed this project with the principal researcher who is suitably qualified to carry out this research and I approve it. The project is registered with the UCL Data Protection Officer, a formal signed risk assessment form has been completed, and appropriate insurance arrangements are in place. *Links to details of UCL's policies on data protection, risk assessment, and insurance arrangements can be found at: http://ethics.grad.ucl.ac.uk/procedures.php*
UCL is required by law to ensure that researchers undergo a Disclosure and Barring Service (DBS) Check if their research project puts them in a position of trust with children under 18 or vulnerable adults.

HEAD OF DEPARTMENT TO DELETE BELOW AS APPLICABLE
I am satisfied that checks: (1) have been satisfactorily completed
(2) have been initiated
(3) are not required
If checks are **not** required please clarify why below.

Chair's Action Recommended: ☐ **Yes** ☐ **No**
A recommendaion for Chair's action can be based only on the criteria of minimal risk as defined in the Terms of Reference of the UCL Research Ethics Committee.

PRINT NAME:

SIGNATURE: **DATE:**

SECTION B	**DETAILS OF THE PROJECT**

B1	**Please provide a brief summary of the project in <u>simple prose</u> outlining the intended value of the project, giving necessary scientific background** *(max 500 words)***.** Anxiety disorders are among the most common psychiatric disorders in school-aged children and adolescents, with international prevalence rates averaging between 4% and 25% (Neil & Christensen, 2009). Unfortunately however, the number of children receiving mental health services in the UK is low (Stallard, 2010) whilst waiting lists are long (Kurtz, 2004). For Educational Psychologists, anxiety is an important construct to consider. This is because high levels of anxiety can impact on intrinsic motivation, concentration and school adjustment (McGee & Stanton, 1990; Ma, 1999; Rodgers & Dunsmuir, 2013) – important prerequisites for learning. Over the past decade, there has been an increasing interest in anxiety prevention over more traditional treatment approaches (Rapee, Kennedy, Ingram, Edwards & Sweeney, 2005). In universal interventions, treatment is provided to all children, regardless of their risk status – an approach which has the benefit of reducing stigmatisation, cost of treatment and time. It has also been proposed that anxiety prevention programs could help to avoid the development of depression in some people, with anxiety typically preceding co-morbid depressive disorders (Neil & Christensen, 2009). This research will explore the impact of a universal mindfulness programme on anxiety levels of children in Year 5. Mindfulness is described as 'paying attention in a particular way: on purpose, in the present moment, and non-judgementally' (Kabat-Zinn, 1994, p.4). There is also some evidence from the adult literature that mindfulness is effective in reducing symptoms of anxiety (Hofmann, Sawyer, Witt & Oh, 2010), although research for children remains in its preliminary stages. In a universal population, Sibinga et al. (2013) found that mindfulness was effective in reducing anxiety levels (d = 0.79) and rumination (d = 0.64). However, this data was collected using African American boys from low SES families which may put the generalizability of the study into question. In a sample of 8-12 year olds, Van de Weijer-Bergsma Langenberg, Brandsma, Oort & Bögels, (2012) also found similar effects of mindfulness on anxiety, but with a smaller effect size (d = 0.37). However, parent-report was the only source of data for anxiety in this study. In this study, a mixed methods design will be used to explore children's perception of change, along with more standardised measures. This research will also attempt to fill two current gaps in the mindfulness literature and explore: (a) the relationship between overall anxiety levels and negative automatic thoughts (NATs) and (b) the relationship between home practice and therapeutic outcome. Why is this important? Using adults populations, Carmody and Baer (2008) found that the time spent engaging in home practice was significantly related to outcome. However, there have been few attempts to gather information about home practice from children. Similarly, there is a body of evidence suggesting that NATs play a crucial role in the pathogenesis of anxiety disorders (Beck & Clark, 1997). However, empirical research has not yet examined the relationship between mindfulness and NATs in children.

B2

Briefly characterise in <u>simple prose</u> the research protocol, type of procedure and/or research methodology (e.g. observational, survey research, experimental). Give details of any samples or measurements to be taken (max 500 words).

An explanatory sequential mixed-methods design will be used, (Creswell, Plano Clark, Gutmann & Hanson, 2003). This is a two-phase approach and has the purpose of using a qualitative strand to explain initial quantitative results.

<u>Phase 1</u>

For the quantitative strand, a quasi-experimental wait-list control design will be used.

Step 1: Two, three-form entry schools will be recruited.

Step 2: The participating schools will send out an information sheet, and opt-out consent form, to parents/ carers. The researcher will also introduce the mindfulness programme to children and provide them with relevant information. Children will be provided with the opportunity to ask questions and then invited to complete an assent form.

Step 3: Children that have consented to participate will be asked to complete three questionnaires - SPENCE anxiety questionnaire (Spence, 1998), Children's Automatic Thoughts Questionnaire (Schniering & Rapee, 2002) and the Mindfulness Awareness and Attention Scale for Children (Lawlor, 2012). The questionnaires will be administered on a whole-class basis and each question will be read to the children individually. Children who need additional assistance to understand the questionnaires will be given access to appropriate support. Teachers will also be asked to complete a sociometric questionnaire. The completed questionnaires will be stored and processed securely.

Step 4: The mindfulness programme will be delivered to the experimental group in the Spring Term. The control group will receive treatment as normal. The intervention will be delivered to the whole-class by a mindfulness practitioner, and supported by a school representative. Children who have requested not to take part will be provided with an alternative activity, agreed by the class teacher. The Mindfulness Awareness Programme (MAP) is an 8-session, manualised programme that aims to help children cope with everyday stressful events, by promoting awareness and acceptance of current thoughts and feelings. The programme consists of explanations and demonstrations, paired/group work and regular homework practices. Note: each morning, children will fill out a short questionnaire about the amount of home practice they completed the previous evening.

Step 5: Post-intervention measurement. All children (both experimental and control) will be asked to complete, for a second time, identical questionnaires as completed prior to intervention. Teachers will also be asked to complete the same sociometric questionnaire.

Step 6: The wait-list control group will then complete the 8-week mindfulness programme.

<u>Phase 2</u>

For the qualitative strand, focus groups will be used. Only the experimental group will be invited to attend, due to time constraints of the research.

Step 1: Further information about focus groups will be presented to parents and children, with another opportunity to sign a consent form. This will happen in week 5 of the mindfulness program.

Step 2: Six children will be randomly selected from each class. They will then be asked to attend a 30 minute focus group, where they will be asked about their feelings, thoughts, perceptions and opinions. The discussions held in the focus group will be recorded using a voice recorder. No video recordings will be made.

Attach any questionnaires, psychological tests, etc. (a standardised questionnaire does not need to be attached, but please provide the name and details of the questionnaire together with a published reference to its prior usage).

1. SPENCE anxiety questionnaire (Spence, 1998) will be used to explore overall anxiety. This is a 45- item questionnaire that is frequently used in research. It uses a Likert-type scale and asks participants to rate their answers as 'never', 'sometimes', 'often' or 'always' in response to questions such as 'I worry about things'. It has demonstrated high internal consistency (α = .92), high split half reliability (r = .90), adequate test-retest reliability (r = .6), as well as good convergent and divergent reliability (Spence, Barrett & Turner, 2003).
   Reference of prior use: Rodgers, A., & Dunsmuir, S. (2013). A controlled evaluation of the 'FRIENDS for Life 'emotional resiliency programme on overall anxiety levels, anxiety subtype levels and school adjustment. *Child and Adolescent Mental Health*, 1-8

2. Children's Automatic Thoughts Questionnaire (CATS) will be used to explore thoughts. The internalising sub-scales (social threat and personal failure) only will be used. These sub-scales alone have been shown to have a high internal consistency (α = 0.95) and adequate (0.60 at 3 months) test-retest reliability (Sheffield et al., 2006).
   Reference of prior use: Sheffield, J. K., Spence, S. H., Rapee, R. M., Kowalenko, N., Wignall, A., Davis, A., & McLoone, J. (2006). Evaluation of universal, indicated, and combined cognitive-behavioral approaches to the prevention of depression among adolescents. *Journal of consulting and clinical psychology*, *74*(1), 66.

3. Mindfulness Awareness and Attention Scale for Children (MAAS-C, Lawlor 2012) will be used to explore mindfulness. This is a 14-item scale that has recently been validated in a sample of children aged 8-12 years. The measure has demonstrated good internal consistency (α = 0.84) and discriminant and convergent validity. See appendix A for copy of questionnaire.
4. Amount of practice – homework will be explained to the children as POST (Practice of Skills Time). Each morning, they will fill out a short questionnaire about the amount of home practice completed. This will then be posted into a letter box within the classroom. See appendix A for copy of questionnaire.

5. Sociometric questionnaire – this questionnaire will ask teachers to identify who is anxious/not anxious and who completes homework regularly/who does not. See appendix A for example.

B3

Where will the study take place (please provide name of institution/department)?
If the study is to be carried out overseas, what steps have been taken to secure research and ethical permission in the study country?
Is the research compliant with Data Protection legislation in the country concerned or is it compliant with the UK Data Protection Act 1998?
It is intended that the programme of study will be delivered within a school setting, during the normal school day in selected primary schools within Greenwich and Harrow. This is currently unconfirmed although a document titled 'Information for Schools' has been attached separately. This will be used to present the research to possible schools. A consent form for participation can also be found in appendix B.
This research will be compliant with the data protection legislation of the United Kingdom. An application for inclusion of this research project on the data protection registration database has been submitted.

B4

Have collaborating departments whose resources will be needed been informed and agreed to participate?
Attach any relevant correspondence.
The details of the specific schools and departments that have agreed to take part in this study will be forwarded to the committee once these schools have been more firmly established.

B5	**How will the results be disseminated, including communication of results with research participants?** A report of the findings, in a pre-agreed form, will be distributed to each participating school. Parents/carers of the participating subjects will also be provided with a summary report of the findings. For example, in the form of a newsletter. Finally, children will receive a summary report of the findings in an accessible form. They will also be thanked for their participation in the research.

B6	**Please outline any ethical issues that might arise from the proposed study and how they are be addressed.** *Please note that all research projects have some ethical considerations so do not leave this section blank.* The BPS Code of Human Research has been read in detail. It is possible that the following ethics issues may arise from this study and these will be addressed in the following ways: **Informed Consent** Participants will be fully informed about the nature of the research prior to signing consent forms. Parents/carers will be sent information leaflets. Children will receive an information leaflet that will also be read to them verbally. Both parties will have the opportunity to discuss any questions with the researcher. Records of consent will be stored securely. Participants will be informed, via written and verbal means about their right to withdraw at any time from the project. The information sheets provided to student and adult participants contains this information. See appendix C for opt-out parent consent form (phase 1), information sheet (phase 2) and opt-in parent consent form (phase 2). A document titled 'Information Leaflet for Parents – Phase 1) has also been attached separately. See appendix D for pupil information sheets (phase 1 & 2) and child assent forms (phase 1 & 2). **Privacy and Confidentiality** Participants are entitled to confidentiality of information that is gathered during the course of this research project. Any data that is published or distributed in relation to this project will therefore be anonymised. Confidentiality will only be breached in exceptional circumstances where there is concern regarding the safety of a student/other individuals. Child protection disclosures will be dealt with in accordance with service and school policy guidelines. **Data Protection** This research will be conducted in line with the guidelines for adequate protection of data. Suitable anonyms will be used when processing data on participants and electronic files will be password protected and stored in the database named to the database officer at UCL. Data will only be stored for as long as is necessary for the completion of this study. **Continuity of Care** A situation may arise where it is evident that a subject requires additional or alternative assistance to support their care and development. In this situation the researcher will discuss their concerns with the Special Educational Needs Co-ordinator (SENCo), and decide whether to involve the schools Educational Psychologist. This will help to ensure that children receive additional support or are referred to alternative support services such as CAMHS.

General responsibility

The researcher will endeavour to ensure that the participants are protected from harm where possible. A wait list control group will be used to compare whether the intervention has benefited the participants. Subsequent participants will therefore only receive the intervention if these results suggest that positive changes in participants have occurred.

SECTION C DETAILS OF PARTICIPANTS

C1

Participants to be studied

C1a. Number of volunteers:	140
Upper age limit:	9
Lower age limit:	10

C1b. Please justify the age range and sample size:
A power calculation was used to determine the sample size, based on the primary outcome. Power calculations based on a Cohen's *d* effect size of 0.48 indicated that with an alpha level of 0.05, a sample size of 70 per group would result in a power level of 80%. This following is an extract from G-Power:

t tests - Means: Difference between two independent means (two groups)

Analysis:	A priori: Compute required sample size	
Input:	Tail(s)	= Two
	Effect size d	= 0.48
	α err prob	= 0.05
	Power (1-β err prob)	= 0.8
	Allocation ratio N2/N1	= 1
Output:	Noncentrality parameter δ	= 2.8397183
	Critical t	= 1.9773035
	Df	= 138
	Sample size group 1	= 70
	Sample size group 2	= 70
	Total sample size	= 140

Given that the intervention is being delivered on a universal basis, it is likely that up to 90 children per group will be initially recruited (30 children in a class x 3). However, this additional number will help to ensure that there remains enough power in the case that parents/children withdraw consent or children are absent for many sessions.

The rationale for selecting children in Year 5 derives from research indicating that anxiety disorders are likely to first emerge at age 11 years olds (Kessler et al., 2005). The study is therefore preventative in nature.

C2

If you are using data or information held by a third party, please explain how you will obtain this. You should confirm that the information has been obtained in accordance with the UK Data Protection Act 1998.
The electronic database to be used for this research project has been registered with the information technology representative, Nico Preston, via an email on 10th July 2014. This database is password protected.

C3	**Will the research include children or vulnerable adults such as individuals with a learning disability or cognitive impairment or individuals in a dependent or unequal relationship? X Yes ☐ No** How will you ensure that participants in these groups are competent to give consent to take part in this study? *If you have relevant correspondence, please attach it.* Parents will be sent a detailed, but accessible, information leaflet in order to inform them of the study. Parents will then have the opportunity to refuse that their child participates. When the researcher visits the school, the study will be explained to the class in the presence of the class teacher. It will be explained that children do not have to take part if they do not want to and that they are able to withdraw at any point without giving a reason. Children will be given an information sheet and invited to sign an assent form.

C4	**Will payment or any other incentive, such as gift service or free services, be made to any research participant?** ☐ **Yes** X **No** If yes, please specify the level of payment to be made and/or the source of the funds/gift/free service to be used. Please justify the payment/other incentive you intend to offer.

C5	**Recruitment** **(i) Describe how potential participants will be identified:** Amy Phipps (Trainee Educational Psychologist) will approach other Educational Psychologists and see whether they are currently delivering mindfulness in schools. This may provide a basis for data collection and support in delivering the intervention. Primary schools within London will also be approached by Amy Phipps and asked whether they are willing to support this research. The researcher will inform the schools about the project using the information sheet for school staff attached. It will be important that these schools are a 3-form entry. **(ii) Describe how potential participants will be approached:** When schools have agreed to take part, parents will be sent an information leaflet explaining the study and giving them the opportunity to opt their child out of the research. The researcher will then visit the primary school and invite the children in year 5 (aged 9-10 years) to take part in the study. The study will be explained to the whole class, and participation will be explained as voluntary. The researcher will answer any questions the children have. Children will also be given an information sheet (this will be read out by the class teacher/researcher) and invited to sign an assent form to indicate that they are willing to participate **(iii) Describe how participants will be recruited:** As above ***Attach recruitment emails/adverts/webpages. A data protection disclaimer should be included in the text of such literature.***

C6	**Will the participants participate on a fully voluntary basis?** **X Yes** ☐ **No** **Will UCL students be involved as participants in the research project?** ☐ **Yes** **X No** *If yes, care must be taken to ensure that they are recruited in such a way that they do not feel any obligation* *to a teacher or member of staff to participate.* **Please state how you will bring to the attention of the participants their right to withdraw from the study without penalty?** Participant's right to withdraw from the study will be made explicit through use of the attached consent form.

C7	**CONSENT** **Please describe the process you will use when seeking and obtaining consent.** Phase 1: Parents will be informed, using information leaflets, about the nature of this research. A contact number for the researcher will be given in the event that a parent/carer wishes to discuss the research in more detail. It would maximise participation (and therefore the quality and representativeness of the data obtained) to seek opt-out consent from parents/carers prior to any student participating in this research. Opt-out consent has been selected because the skills taught in mindfulness (e.g. recognising thoughts and feelings, managing stress) are broadly similar to the content of PSHE lessons. Children will also remain in their normal class at all times, with no change required for the intervention. Given that the intervention is "universal", no child will be singled out. Opt-out parental consent is also the approach that schools use in PSHE lessons (e.g. when asking parents to decide whether they would like their child to discuss particular religious issues or be involved in sex education). Furthermore, the pre and post intervention measures are not specialist psychological tests and are publicly available. There are no anticipated risks to the children taking part in this study. Finally, this research is not dissimilar to other school-based studies where opt-out parental consent has been used successfully and no adverse ethical issues were experienced by participants, their families or schools (e.g. Kinloch & Dunsmuir: The Effectiveness of Children's Declarations at Producing Change in Literacy Attainment and Attitudes 2644/001). Furthermore, the *training programme* used in this study is broadly similar in content to other research that is using opt-out parental consent (Rice: An Evaluation and Comparison of Classroom-Based Interventions to Prevent Depression and Promote Positive Mental Health in Adolescents 1552/003). In order to obtain child assent, the researcher will explained the research to the whole class, in the presence of the class teacher. Children will also be given an information sheet (this will be read out by the class teacher/researcher) and invited to sign an assent form to indicate that they are willing to participate. The children will be told that taking part is voluntary, and that they can withdraw at any time. Phase 2: Parents will be informed, using information leaflets, about the second phase of the research. A contact number for the researcher will be given in the event that a parent/carer wishes to discuss the research in more detail. Consent will be sought using an opt-in consent form. Opt-in consent has been selected because children will be removed from normal lessons to take part in the focus group. Child assent will be obtained in the same format as above. It should be noted that for both phases, the research will be conducted in line with the guidelines for adequate protection of data. Suitable anonyms will be used when processing data on participants and electronic files will be password protected and stored in the database named to the database officer at UCL. Data will only be stored for as long as is necessary for the completion of this study. This anonymity will be explained to the parents and children in the information sheet. *A copy of the participant information sheet and consent form must be attached to this application. For your convenience proformas are provided in C10 below. These should be filled in and modified as necessary.*

C8	**Will any form of deception be used that raises ethical issues? If so, please explain.** No.

C9	**Will you provide a full debriefing at the end of the data collection phase?** X **Yes** ☐ **No** If 'No', please explain why below.

C10	**Information Sheets And Consent Forms** **A poorly written Information Sheet(s) and Consent Form(s) that lack clarity and simplicity frequently delay ethics approval of research projects.** The wording and content of the Information Sheet and Consent Form must be appropriate to the age and educational level of the research participants and clearly state in simple non-technical language what the participant is agreeing to. Use the active voice e.g. "we will book" rather than "bookings will be made". Refer to participants as "you" and yourself as "I" or "we". An appropriate translation of the Forms should be provided where the first language of the participants is not English. If you have different participant groups you should provide Information Sheets and Consent Forms as appropriate (e.g. one for children and one for parents/guardians) using the templates below. Where children are of a reading age, a written Information Sheet should be provided. When participants cannot read or the use of forms would be inappropriate, a description of the verbal information to be provided should be given. Please ensure that you trial the forms on an age-appropriate person before you submit your application.

Information Sheet for in Research Studies

You will be given a copy of this information sheet.
Title of Project:
This study has been approved by the UCL Research Ethics Committee (Project ID Number):

Name

Work Address

Contact Details

We would like to invite to participate in this research project.
Details of Study:

Please discuss the information above with others if you wish or ask us if there is anything that is not clear or if you would like more information.

It is up to you to decide whether to take part or not; choosing not to take part will not disadvantage you in any way. If you do decide to take part you are still free to withdraw at any time and without giving a reason.

All data will be collected and stored in accordance with the Data Protection Act 1998.

Informed Consent Form for in Research Studies

Please complete this form after you have read the Information Sheet and/or listened to an explanation about the research.
Title of Project:
This study has been approved by the UCL Research Ethics Committee (Project ID Number):

Thank you for your interest in taking part in this research. Before you agree to take part, the person organising the research must explain the project to you.
If you have any questions arising from the Information Sheet or explanation already given to you, please ask the researcher before you to decide whether to join in. You will be given a copy of this Consent Form to keep and refer to at any time.

Participant's Statement

I

- have read the notes written above and the Information Sheet, and understand what the study involves.
- understand that if I decide at any time that I no longer wish to take part in this project, I can notify the researchers involved and withdraw immediately.
- consent to the processing of my personal information for the purposes of this research study.
- understand that such information will be treated as strictly confidential and handled in accordance with the provisions of the Data Protection Act 1998.
- agree that the research project named above has been explained to me to my satisfaction and I agree to take part in this study.

Signed: Date:

SECTION D DETAILS OF RISKS AND BENEFITS TO THE RESEARCHER AND THE RESEARCHED

D1	**Have UCL's Risk Assessment Procedures been followed?** **X Yes** ☐ **No** If **No**, please explain.

D2	**Does UCL's insurer need to be notified about your project before insurance cover can be provided?** ☐ **Yes** **X No** If **Yes**, please provide confirmation that the appropriate insurance cover has been agreed. *Please attach your UCL insurance registration form and any related correspondence.*

D3	**Please state briefly any precautions being taken to protect the health and safety of researchers and others associated with the project (as distinct from the research participants).** As this research is focussed on developing resilience, emotive issues may be discussed. It is possible that this may be distressing for both the researcher and the school staff present in the classroom. After each session, time will be allocated for a short debrief with the participating staff member. If face to face contact is limited, this may occur over the telephone. The researcher will receive support from a thesis supervisor on a regular basis. The researcher will also be able to use service supervision to discuss any issues that arise during the research process.

D4	**Will these participants participate in any activities that may be potentially stressful or harmful in connection with this research? X Yes ☐ No** If **Yes**, please describe the nature of the risk or stress and how you will minimise and monitor it. We will be asking children about sensitive topics such as feelings of anxiety. As a result, children will be reminded that they are able to withdraw at any point, without giving a reason. When completing the questionnaires, children may also wish to leave certain answers and will be informed that they can do this. At the start of the process, children will also be provided with an information leaflet that contains the Freephone contact number for Childline. It will be verbally explained to children that they can call this line, or talk to a member of staff, if they find any of the activities stressful.

D5	**Will group or individual interviews/questionnaires raise any topics or issues that might be sensitive, embarrassing or upsetting for participants?** If **Yes,** please explain how you will deal with this. As above.

D6	**Please describe any expected benefits to the participant.** When delivered on a universal basis, mindfulness has been shown to be effective in reducing symptoms of anxiety (Sibinga et al., 2013; Van de Weijer-Bergsma Langenberg, Brandsma, Oort & Bögels, (2012). Therefore, it is hoped that this mindfulness intervention will show similar effects and be a positive experience for the children. Research also indicates that anxiety disorders are likely to first emerge at age 11 years olds (Kessler et al., 2005). By using children aged 9-10 years, this study will also be preventative in nature.

D7	**Specify whether the following procedures are involved:** **Any invasive procedure(s)** ☐ **Yes** X **No** **Physical contact** ☐ **Yes** X **No** **Any procedure(s) that may cause mental distress** X **Yes** ☐ **No** Please state briefly any precautions being taken to protect the health and safety of the research participants. See D4.

D8	**Does the research involve the use of drugs?** ☐ **Yes** **X No** If **Yes**, please name the drug/product and its intended use in the research and then complete Appendix I **Does the project involve the use of genetically modified materials?** ☐ **Yes** **X No** If **Yes**, has approval from the Genetic Modification Safety Committee been obtained for work? ☐ Yes ☐ No If **Yes**, please quote the Genetic Modification Reference Number:

D9	**Will any non-ionising radiation be used on the research participant(s)?** ☐ **Yes** X **No** If **Yes**, please complete Appendix II.

D10	**Are you using a medical device in the UK that is CE-marked and is being used within its product indication?** ☐**Yes** X **No** If **Yes**, please complete Appendix III.

CHECKLIST

Documents to be Attached to Application Form (if applicable)	**Ticked if attached**
Section B: Details of the Project	
• Questionnaire(s) / Psychological Tests	X
• Relevant correspondence relating to involvement of collaborating department/s and agreed participation in the research.	X
Section C: Details of Participants	
• Parental/guardian consent form for research involving participants under 18	X
• Participant/s information sheet	X

- Participant/s consent form/s X
- Advertisement ☐

Section D: Details of Risks and Benefits to the Researcher and the Researched

- Insurance registration form and related correspondence ☐

Appendix I: Research Involving the Use of Drugs

- Relevant correspondence relating to agreed arrangements for dispensing with the pharmacy ☐
- Written confirmation from the manufacturer that the drug/substance has has been manufactured to GMP ☐
- Proposed volunteer contract ☐
- Full declaration of financial or direct interest
- Copies of certificates: CTA etc… ☐

Appendix II: Use of Non-Ionising Radiation
Appendix III: Use Medical Devices

Appendix A:

Questionnaires/Psychological Tests

Table 1 The Mindful Attention Awareness Scale modified for Children

	Almost never	Not very often at all	Not very often	Somewhat often	Very often	Almost always
I could be feeling a certain way and not realize it until later	1	2	3	4	5	6
I break or spill things because of carelessness, not paying attention, or thinking of something else	1	2	3	4	5	6
I find it hard to stay focused on what's happening in the present moment	1	2	3	4	5	6
Usually, I walk quickly to get where I'm going without paying attention to what I experience along the way	1	2	3	4	5	6
Usually, I do not notice if my body feels tense or uncomfortable until it gets really bad	1	2	3	4	5	6
I forget a person's name almost as soon as I've been told it for the first time	1	2	3	4	5	6
It seems that I am doing things automatically without really being aware of what I am doing	1	2	3	4	5	6
I rush through activities without being really attentive to them	1	2	3	4	5	6
I focus so much on a future goal I want to achieve that I don't pay attention to what I am doing right now to reach it	1	2	3	4	5	6
I do jobs, chores, or schoolwork automatically without being aware of what I'm doing	1	2	3	4	5	6
I find myself listening to someone with one ear, doing something else at the same time	1	2	3	4	5	6
I walk into a room, and then wonder why I went there	1	2	3	4	5	6
I can't stop thinking about the past or the future	1	2	3	4	5	6
I find myself doing things without paying attention	1	2	3	4	5	6
I snack without being aware that I'm eating						

Practice of Skills Time (POST)

Research No.: _____

How much mindfulness practice did you do last night? *Circle the closest answer.*

No practice
1-2 minutes
2-4 minutes
5-6 minutes
6-8 minutes
8-10 minutes
10 minutes +

Sociometric questionnaire:

For each child, you must decide whether they (a) display anxious behaviours, or not and (b) whether they complete homework regularly, or not. Definitions are provided below. For each child, please place a ☑ in the appropriate place. Please answer as accurately as possible.

Children are considered to have an anxiety disorder (i.e. they show clinically anxious behaviour) if their anxiety is: (a) extreme and uncontrollable, (b) in response to no specific threat and (c) associated with and intense range of physical and affective symptoms as well as changes in behaviour and cognition. These symptoms may include intense worrying, irrational thoughts, self-consciousness, irritability, constant headaches and difficulty concentrating (King and Ollendick, 1989; American Psychological Society, 2001).

'Regular' homework completion is defined as completing 75% or more of the homework that is set.

Name	**Anxiety**		**Homework**	
	Displays anxious behaviours	Does not display anxious behaviours	Completes homework regularly	Does not complete homework regularly
Example		✓		✓
Curtis				
David				
Eva				
Geraint				
Hannah				
Henry				
Isabella				
Jeremiah				
Kirsty				
Louis				

Appendix B:

Relevant correspondence relating to involvement of collaborating department/s and agreed participation in the research

Headteacher Consent Form

Please tick as appropriate.

1. I confirm that I have read and understand the information sheet called 'Mindfulness in Schools' and have had the opportunity to ask questions. ☐

2. I give permission for this research, led by Miss Amy Phipps (and supervised by Dr. Sandra Dunsmuir), to take place in my school. ☐

Your Name ……
Your School ……..
Signature……Date……

Appendix C:
Parental consent form (Phase 1)

Opt-Out Consent Form for Parents/Carers

This form should only be completed by a parent/carer who DOES NOT AGREE to their child taking part in the mindfulness programme. If you are you are happy for your child to take part, you do not need to fill out this form.

Please tick as appropriate.

1. I confirm that I have read and understand the information sheet called 'Mindfulness in Schools' and have had the opportunity to ask questions. ☐

2. I DO NOT want my child to take part in this research. ☐

Your Name ……
Child's full name……
Child's school ……
Signature……Date……

Parent Information Sheet (Phase 2)

Who are you?
My name is Amy Phipps and I am a Trainee Educational Psychologist. As you will be aware, your child has been taking part in a mindfulness programme at school. For the next phase of the research, we would like to run a *focus group* to explore what the children thought about the programme and whether they have found it helpful.

What is a focus group?
A focus group is a small-group discussion, where children are asked about their feelings, thoughts, perceptions and opinions. A focus group usually has been 6-8 children and lasts for approximately 30 minutes. Most children enjoy talking to an adult about their experiences and we do not anticipate any risks.

Does my child have to take part?
It is entirely up to you whether you would like your child to take part. If you decide to take part, you are still free to withdraw at any time without giving a reason. *If you are happy for your child to take part,* please complete the consent form attached to this letter and return it to your child's class teacher.

Only 6-8 children from each class will be selected to take part in the focus group. We understand that your child may find this disappointing but we will explain this process to them beforehand.

What will the information be used for?
The discussions held in the focus group will be recorded using a voice recorder. No video recordings will be made. By recording the discussions, we will be able to transcribe (write up) the data and then analyse it most effectively. The recording tape will be wiped clear after this. All information collected during the course of this research will be kept strictly confidential and will be stored in accordance with the Data Protection Act 1998.

Do you want to know anything else?
If you would like more information about our research, please contact Amy Phipps on:

ID Number …….. (for office use only)

Parent Consent Form (Phase 2)

Consent Form for Parents/Carers

Please circle your answer to the questions below:

Have you read the information sheet called 'Mindfulness in Schools'?	Yes	No
Do you understand what this project is about?	Yes	No
Have you asked all the questions you want?	Yes	No
Do you understand it's OK to stop taking part at any time?	Yes	No
Are you happy for your child to take part?	Yes	No

Parent/Carer Signature:

Name:
……

Signature:
…….

Date:
…….

Researcher Signature:

Name:
……

Signature:
…….

Date:
…….

Appendix D
Children information sheet (Phase 1 & 2)
Children consent form (Phase 1 & 2)

Mindfulness in Schools

Who are you?
My name is Amy Phipps and I am a Trainee Educational Psychologist. I will be working in your school and carrying out an important investigation. I would like your help!

What is the investigation?
The investigation involves working out whether mindfulness is a good way to help you cope with your thoughts and feelings.

What is mindfulness?
Mindfulness is about being in the 'here and now' – not worrying about the future or thinking about the past. By practising mindfulness, you will be better able to concentrate in school. You will also become a better thinker and be better able to cope with difficult feelings.

What will I have to do?
We would like you to attend 8 sessions that will be taught to your whole class. These sessions will last for 1 hour each and will be part of your normal day at school.

We will also ask you to complete some questionnaires about your thoughts and feelings – once before the mindfulness programme and again when it has finished. This will let us know if it has been helpful. The questionnaires are not a test.

Do I have to take part?
You should only take part if you want to. If you feel upset at any point or do not want to continue, it is also OK for you to stop. However, most children enjoy taking part in the group activities, filling in questionnaires and learning something new!

What will the information be used for?
The information we collect is completely private and we will not tell anyone about the specific answers that you have given. However, if you mention something that makes us worried about your safety then we may need to tell another adult. If you want to talk about your thoughts or feelings in more detail, you can also speak to your class teacher or call Childline for free on 0800 1111.

We would like to share the findings of our investigation with you at the end.

ID Number …….. (for office use only)

Consent Form for Children and Young People

Please circle your answer to the questions below:

Have you read the information sheet for Children and Young People?	Yes	No
Do you understand what this project is about?	Yes	No
Have you asked all the questions you want?	Yes	No
Have you had your questions answered in a way you understand?	Yes	No
Do you understand it's OK to stop taking part at any time?	Yes	No
Are you happy to take part?	Yes	No

If any answers are 'no' or you **don't** want to take part, **don't** sign your name!

Child's Signature:

Name:
……

Signature:
…….

Date:
…….

Researcher Signature:

Name:
……

Signature:
…….

Date:
…….

Mindfulness in Schools

We've almost finished!
We have been practising mindfulness for some time now. I hope that you have been enjoying the activities and learning more about your thoughts and feelings. I still need a little bit more help though!

What is the next investigation?

The next part of the investigation will give you chance to talk about your thoughts, feelings and opinions. We want to know what you have thought about the mindfulness programme and whether it has been helpful. We really value your opinion and want to listen to what you have to say.
Most children enjoy taking part in the discussion and talking about their experiences.

What will I have to do?
If you are selected to take part, we will ask you to come out of your lesson for 45 minutes. In a group of 6-8 children, we will talk about what you have enjoyed about mindfulness, anything that you found tricky and any changes that you have noticed. This is not a test.

Do I have to take part?
You should only take part if you want to. If you do not want to take part then that is OK and will be no problem. If you decide to take part, you are still free to stop at any time without giving a reason.

What will the information be used for?

The information we collect is completely private and we will not tell anyone about the specific answers that you have given. However, if you mention something that makes us worried about your safety then we may need to tell another adult. If you want to talk about your thoughts or feelings in more detail, you can also speak to your class teacher or call Childline for free on 0800 1111.

We would really like your help with this part of the investigation!

ID Number …….. (for office use only)

Consent Form for Children and Young People

Please circle your answer to the questions below:

Have you read the information sheet for Children and Young People?	Yes	No
Do you understand what this project is about?	Yes	No
Have you asked all the questions you want?	Yes	No
Have you had your questions answered in a way you understand?	Yes	No
Do you understand it's OK to stop taking part at any time?	Yes	No
Are you happy to take part?	Yes	No

If any answers are 'no' or you **don't** want to take part, **don't** sign your name!

Child's Signature:

Name:
……

Signature:
…….

Date:
…….

Researcher Signature:

Name:
……

Signature:
…….

Date:
……

UCL RESEARCH ETHICS COMMITTEE
ACADEMIC SERVICES

Dr Sandra Dunsmuir
Division of Psychology and Language Sciences
UCL

16 October 2014

Dear Dr Dunsmuir

Notification of Ethical Approval
Project ID 6007/001: What is the impact of a universal mindfulness intervention on the anxiety levels of children in Year 5?

In my capacity as Chair of the UCL Research Ethics Committee (REC) I am pleased to confirm that I have approved your study for the duration of the project i.e. **until October 2015.**

Approval is subject to the following conditions:

1. You must seek Chair's approval for proposed amendments to the research for which this approval has been given. Ethical approval is specific to this project and must not be treated as applicable to research of a similar nature. Each research project is reviewed separately and if there are significant changes to the research protocol you should seek confirmation of continued ethical approval by completing the 'Amendment Approval Request Form': http://ethics.grad.ucl.ac.uk/responsibilities.php

2. It is your responsibility to report to the Committee any unanticipated problems or adverse events involving risks to participants or others. Both non-serious and serious adverse events must be reported.

Reporting Non-Serious Adverse Events
For non-serious adverse events you will need to inform Helen Dougal, Ethics Committee Administrator (ethics@ucl.ac.uk), within ten days of an adverse incident occurring and provide a full written report that should include any amendments to the participant information sheet and study protocol. The Chair or Vice-Chair of the Ethics Committee will confirm that the incident is non-serious and report to the Committee at the next meeting. The final view of the Committee will be communicated to you.

Reporting Serious Adverse Events
The Ethics Committee should be notified of all serious adverse events via the Ethics Committee Administrator immediately the incident occurs. Where the adverse incident is unexpected and serious, the Chair or Vice-Chair will decide whether the study should be terminated pending the opinion of an independent expert. The adverse event will be considered at the next Committee meeting and a decision will be made on the need to change the information leaflet and/or study protocol

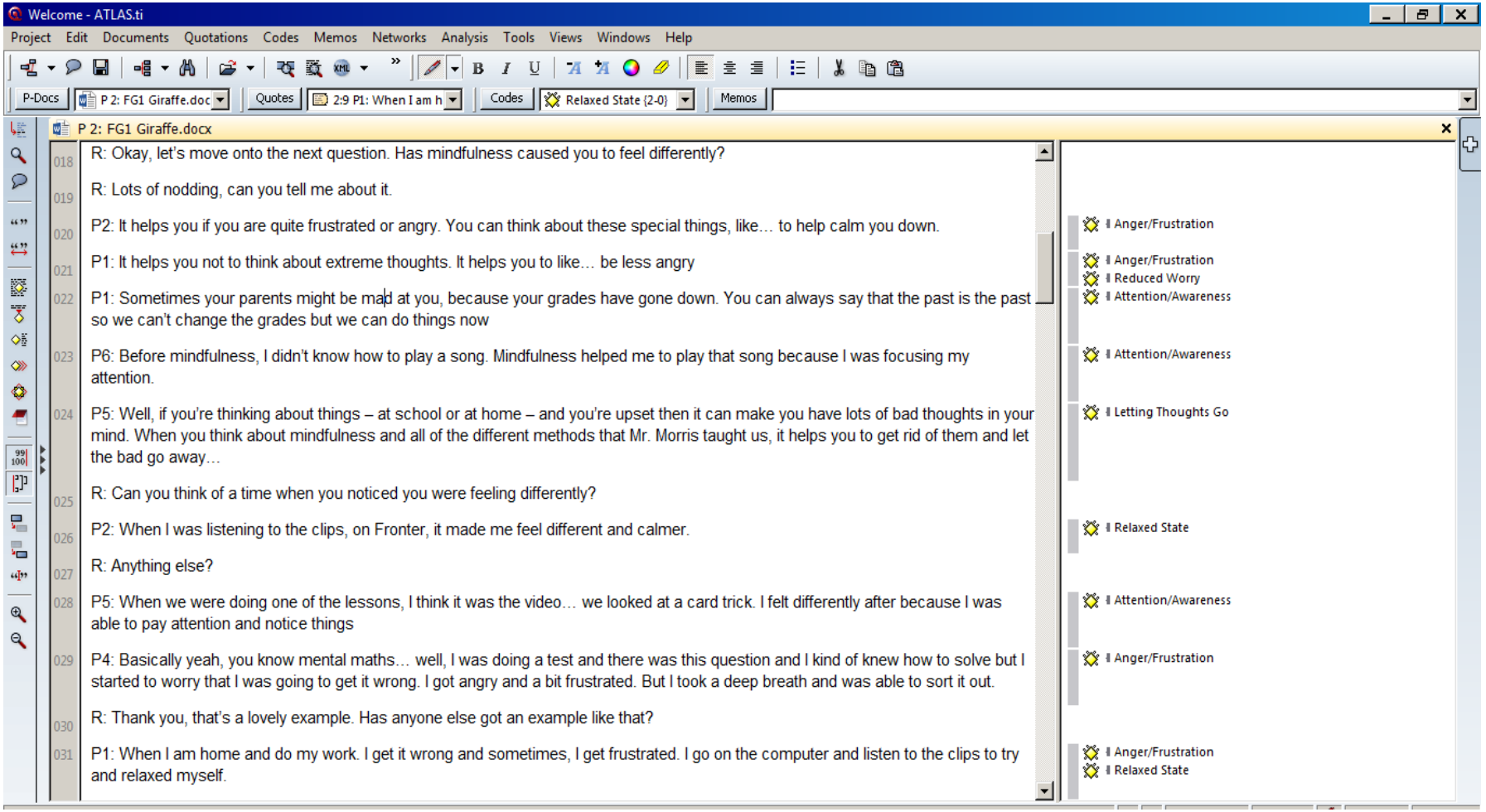
On completion of the research you must submit a brief report (a maximum of two sides of A4) of your findings/concluding comments to the Committee, which includes in particular issues relating to the ethical implications of the research.With best wishes for the research.

Yours sincerely

Professor John Foreman
Chair of the UCL Research Ethics Committee

Cc:
Amy Phipps, Applicant
Professor Peter Fonagy

M. Screenshot from Atlas.Ti



N. Organising Codes into Themes

Codes generated in Atlas.ti	Possible Themes
1. Anger/ Frustration 2. Reduced Worry 3. Relaxed State	→ Reported Change
4. Present Moment Awareness 5. Increased Attention 6. Positive Thinking 7. Letting Thoughts Go 8. Distancing	→ Mechanisms
9. Benefits 10. Difficulties 11. Recommendations for Future	→ Home Practice
12. Gratitude (???)	

O. Themes and Sub-Themes from Thematic Analysis

Theme: Reported Change
Sub-theme: Reduction of worry (cognitions and emotions)

P13: Usually when I go to bed, all of my extreme thoughts come to me about the day. I always…like…. Don't fall to sleep immediately. I always look up and think. I get loads and loads of extreme thoughts about the day. Sometimes, they are random things that pop into my head that have happened years ago. I start thinking… "God, I'm so stupid. Why did I do that?" That doesn't happen as much now. It still happens but not as much as it used to do.
P2: Most of the time I worry ahead, like about the next week or if I'm going to have to tell my guitar teacher something. When I worry, worry, worry then I put the mindfulness clips on. It does help me.
P2: It helps make your worries go away…
P1: Last week, we were going to go swimming and I was quite worried. I put on a mindfulness clip and that helped.
P6: Usually when I go to sleep, I think about all the bad things that can happen…. like to my family. When I went to mindfulness then I learnt how to take some deep breaths, let my thoughts go away and then I try to go to sleep.
P1: It helps you not to think about extreme thoughts.
P3: When I am at school then I am really shy. When I think about mindfulness, I've realised that it doesn't matter what other people think. I've started to talk to other people on my table.
P2: I use positive thinking. I don't worry as much about what other people think anymore.
P6: Well, before I was really scared of animals in the Zoo like a big lion. Basically, mindfulness got me over my fears.
P15: I think that mindfulness helps you from being scared. It helps you with fear.
P7: When I'm at home, sometimes I worry about doing my homework…. If I'm going to finish it or not…. If I'm going to get in trouble. Now I just use the exercises that we did with Mr Morris. Breathing in and breathing out and it really helps.
P5: I used to have a lot of extreme thoughts but then…. Mr. Morris taught us about worry time. I've tried that and it helped to stop my worries. Now that I can control them better I don't use worry time as much but I know it's there. I still worry sometimes but a lot less…
P13: Before, every time I used to get upset if people we mean to me… I would have thoughts like "I'm such an idiot", "Why did I say that?" or "I'm so stupid!" or "I shouldn't be born". I still have those thoughts but they are reduced… I have them less often.
P14: I used to have lots of extreme thoughts when something happened…. Like "I should have said this", "I should have said that". I don't have those thoughts as often anymore but I still worry about things at night.
P6: I like worry time. It helps me to relax in the day and then when I tried to worry, I couldn't really.
P7: If there is pressure then I don't tend to worry about what it is when I remember what we'd done in mindfulness. It helps me to let those thoughts go away. I feel better than I did before.
P12: When we did a play yesterday, I was a little bit scared and stuff. I was

thinking… I'm going to forget my lines. I thought of mindfulness and remembered the techniques Mr. Morris gave me. He said to breathe in and breathe out. When I did the assembly, I felt more confident and less worried.
P12: Well, I used to think that I was rubbish at all that stuff. I thought…. I'm rubbish at this sport", "I'm rubbish at this lesson" and "I'm rubbish at school". I still tried my best. Now I've got more confidence in myself and mindfulness has helped me to take away all those bad, negative thoughts and put them into more positive thoughts.

Theme: Reported Change
Sub-theme: Reduction of anger

P13: Yes! I feel less angry now. I still go up to my room when I feel angry and stuff because I like to have my space to calm down. Mindfulness helps me feel less agitated. Even though I do still get agitated, it helps a lot. I get agitated a lot less
P10: This boy yeah… he came to my house. We were all playing baseball and he hit the ball over. I would normally get really angry but I just started to play another game with him instead.
P15: I used to punch my brother really hard before when he made me angry. Now I just breathe and let my angry thoughts go away.
P1: When I get angry, I start to bang my hand on the table. So, I've kind of stopped doing that now because I am feeling less frustrated.
P10: I feel more relaxed cos when I get angry with my sister because she is always drawing on my work. She wants her to play with my football. I don't let her and become angry. Now I don't get angry with her at all.
P1: When I go home and do my work, I get it wrong and sometimes I get frustrated. I go on the computer and listen to the clips to try and relax myself.
P2: It helps you if you are quite frustrated or angry. You can think about these special things, like… to help calm you down.
P1: It helps you not to think about extreme thoughts. It helps you to like… be less angry.
P4: I got angry and a bit frustrated. But I took a deep breath and was able to sort it out.
P5: Sometimes, when I'm doing revision tests and I'm doing something that is higher level. When we are marking it then I usually find out that I've got a lot of questions wrong. It makes me feel really angry at myself but I know that I've tried my best. I think of mindfulness and put the clips on, that really helps me to feel more relaxed.
P4: I've noticed that, at home, I get really angry with my older brother. Now that I've done mindfulness, I try not to get angry at my brother.
P11: Whenever I get really annoyed, I breathe in and breathe out. It just flows away…
P11: It helps you to control your thoughts and urrr…. helps you when you're angry. It helps to calm you down.
P8: Well…. Every time Mr. Morris would come then we would do the breathing exercises and that really helped me. Almost in everything I do bad in, if I get angry, I used that. I just remember what we have to do for the exercises.
P11: Yesterday, with my sister…. We had M&Ms. She was trying to take mine because she finished her. But I…I normally shout at her and snatch things off her. This time, I just let her.
P8: At times, me and my sister we always shout at each other. Now that we've done

mindfulness then it's made me calmer.
P7: I used to have a bad temper sometimes. Like… my brother and sister… if they annoyed me then I would have a bad temper and start shouting at them and then I'd be really angry for the rest of the day. Now, in my behaviour – I can handle it a little bit more and share my feelings with my brother and sister so that they understand. I don't shout at them as much anymore.
P11: When I get annoyed at home then I used to put the mindfulness breathing on and it helped me to make myself calm. It was like mindfulness at home.

Theme: Reported Change
Sub-theme: Reduction in physical tension

R: If you had to explain mindfulness to somebody else in your school, what would you say? P4: I would describe it as a relaxation session.
P3: Errr…It helps you relax because you can focus on your breathing and stuff
P2: It takes your mind off things and helps you to relax.
P9: I think that mindfulness is really relaxing
P7: It has caused me to feel differently because I'm quite more relaxed now.
P2: When I was listening to the clips, on Fronter, it made me feel different and calmer.
P1: When I go home and do my work, I get it wrong and sometimes I get frustrated. I go on the computer and listen to the clips to try and relax myself.
P6: Well, before I was really scared of animals in the Zoo like a big lion. Basically, mindfulness got me over my fears.
P4: I like to use it when I feel worried, angry or after my work so that I can be relaxed and calm before bed.
P5: We have access to the clips at home so we can be relaxed and calm at home.
P6: I like worry time. It helps me to relax in the day and then when I tried to worry, I couldn't really.
R: If you had to explain mindfulness to somebody else in your school, what would you say? P1: Calming
P9: I think that mindfulness is really relaxing
P5: Well usually, Ms. D uses the bell we are really noisy. She uses it to help us calm down.
P10: Yeah, it made me more relaxed and more calm.
P5: Sometimes, when I'm doing revision tests and I'm doing something that is higher level. When we are marking it then I usually find out that I've got a lot of questions wrong. It makes me feel really angry at myself but I know that I've tried my best. I think of mindfulness and put the clips on, that really helps me to feel more relaxed.
P10: I didn't really want to try it. I tried it once and it was a bit relaxing and then… yeah
P12: Sometimes, I like looking out of my window because it makes me feel calmer and more lighter. Sometimes, I feel differently after mindfulness. I feel like a more calmer person and not very hyper.
P12: What I would say that is… Mindfulness is about…. your breathing and being calm. It is to do with your body and how you feel.

Theme: Mechanisms of Change

Sub-theme: Increased Positive Cognition

P6: Well it's not really a technique but he showed us a clip once, about Charlie Brown. Like, he went into this girl's office and she told him everything that was wrong with him. That kind of just stuck in my head. It made me realise that I don't need to think about all those negative things so much. I can think happy thoughts instead.
P6: Sometimes when I get angry, my friends bring me to the bench at playtime. We talk about the good things instead of worrying. Not sure if that is mindfulness.
P5: Sometimes when I think about things that I have happened to my family, my friends help me to have positive thoughts. We talk about the good things and memories rather than being sad. I think Mr. Morris was talking about positive thinking, not negative things.
P2: I use positive thinking. I don't worry as much about what other people think anymore.
P13: It helps me stop thinking about them and think about the happy thoughts. It's like the think chain…. You think 1 thing and it turns into another thought and another thought. I try to think about happy thoughts so that then I can think of another happy thing and then another happy thing. That's the think chain
P13: It's like the think chain. You just need to have a positive thought and then you get another one and another one.
P15: Before…. I used to think about how I have caused problems to everyone. Mindfulness helped me and I breathe and I think about myself. I sometimes close my eyes and think good thoughts.
P12: I think about my Dad a lot because he passed away. I just think about the good things that happened with him. This helps me to feel a little bit happier rather than just crying all the time.
P12: Well, I used to think that I was rubbish at all that stuff. I thought…. I'm rubbish at this sport", "I'm rubbish at this lesson" and "I'm rubbish at school". I still tried my best. Now I've got more confidence in myself and mindfulness has helped me to take away all those bad, negative thoughts and put them into more positive thoughts.

Theme: Mechanisms of Change
Sub-theme: Increased Cognitive Distancing

P5: Well, if you're thinking about things – at school or at home – and you're upset then it can make you have lots of bad thoughts in your mind. When you think about mindfulness and all of the different methods that Mr. Morris taught us, it helps you to get rid of them and let the bad go away…
P1: Last week, we were going to go swimming and I was quite worried. I put on a mindfulness clip and that helped. R: Were you having extreme thoughts at the time? P1: Yeah, I was worried about swimming and what might happen. Mindfulness helped me to let the thoughts go away…
P6: Usually when I go to sleep, I think about all the bad things that can happen…. like to my family. When I went to mindfulness then I learnt how to take some deep breaths, let my thoughts go away and then I try to go to sleep.
P5: Mr. Morris said that most people get annoyed when they have lots of worries and they won't go away. I like practising at home because it helped me let me thoughts

go…
P7: You can focus on your thoughts and we learnt how to let it drift away as well.
P10: I think that mindfulness is like… good for people…. Because it helps you to let thoughts drift away and then you don't need to worry about most things because they have drifted away in your mind
P7: If there is pressure then I don't tend to worry about what it is when I remember what we'd done in mindfulness. It helps me to let those thoughts go away. I feel better than I did before.
P7: Sometimes, thoughts come along like… some things that have happened in the past. They just make me angry and angrier then I forget it. Sometimes it comes back again. But then, I remember what Mr Morris said to us…. to just let those thoughts drift away and to do that every time it comes to you. That has really helped.
P7: Well Mr. Morris taught us that errr…. We can just let our thoughts drift away. He told us that we can go on Fronter and use the meditations and like… the recordings of the meditations. That really helped and in class we would do like…. Lift one foot up and we would bring it back to us and there is a lot of pressure. When we let it go, Mr. Morris said it was like letting a thought go.
P9: Nothing has really changed about me except I don't get errr… I forget things quicker. Like, if I've had an argument with someone then I forget it more easily. Sometimes it comes back into my mind.
P7: When Mr. Morris gave us the bell then we used to do the ding ding in class. When me and my friends… we start to call each other names… I used to get really frustrated. When Ms. O rings the bell then I think about it more but then I let it go….
P2: Even if you have all of these thoughts popping into your head, like about yourself then most of the time, it's not really real.
P1: Well in the car, on the way there, we were quite early. I was worrying about the swimming lesson and was thinking…. I don't want to go in the deep end. Mr. Morris told us that they are only worries.

Theme: Mechanisms of Change
Sub-theme: Increased attention/awareness

P6: We watched lots of video clips. One, I think it was a polar bear. Another one, well…. it was a tortoise and he told us the past is the past and the present is a gift.
P9: It's helped me to concentrate more
P8: So, our teacher… Well, we did the bell. That really helped because the bell would be like the start sound. It would get me concentrating. When the bell stopped, I would still concentrate. When we did our work after we did the breathing in and breathing out exercise then it really helped my work because I could concentrate more.
P5: When we were doing one of the lessons, I think it was the video… we looked at a card trick. I felt differently after because I was able to pay attention and notice things
P9: My Mum…. At the parent's meeting said…. The teacher said that I wasn't concentrating very much so she moved me closer so that she could keep an eye on me. Now…she said that she doesn't need to move me because I'm not getting in trouble anymore and I'm doing my work.
P1: Sometimes your parents might be mad at you, because your grades have gone down. You can always say that the past is the past so we can't change the grades but

we can do things now.
P6: Before mindfulness, I didn't know how to play a song. Mindfulness helped me to play that song because I was focusing my attention.
P7: I think I would say to them about my feelings and how it helps you to breathe and you can get to concentrate more on your work. You can focus on your thoughts and we learnt how to let it drift away as well.
P10: I tend to notice things more like…. Before the mindfulness course then I would like…. If something was missing in my pencil case or my room then I wouldn't notice. Now if something was missing then I would always remember.
P8: I think that I'm a bit more organised now because sometimes I keep forgetting things like my homework diary when we go out for reading. Now I keep remembering it more.
R: It sounds like you're not worrying about the future as much anymore. Is that true? P12: Yes, I try and be in the present.
P13: I think that mindfulness is a skill that you will learn. It's a skill to help you keep focused on what is happening right now
P14: I think mindfulness is…. kind of like… focusing on things and keeping your head in the present.
P12: Sometimes…. I used to think about a lot of things like… What's going to happen there? What else might happen? I sometimes think of 1 thing now. When you're doing work at school, I usually get distracted really easily. Now I get less distracted and leave what I'm thinking about.
P14: I'm more focused now. I'm not saying that I am 100% focused but its better
P12: I really liked the sound one. I notice more sounds now, like…. I hear a bird
P9: Well, because we did the eating exercise with the maltesters. Now, before I swallow my food then I taste it more and how I feel about it.
P13: I tend to eat a lot slower now because I like to appreciate my food. At least once or twice a day…. I always eat at least one bite mindfully

Theme: Home Practice
Sub-theme: Benefits

P8: It helps me a little bit more at home because I can concentrate a little bit more because then I'm not thinking about what my friends are doing or what the sounds are. It's quite quiet at home and there isn't much noise because everyone is working.
P4: Well I had some worries at home so I sat down with my mum and we talked about them. That helped me. After that, we put on the little worry time clip.
P4: I like it because you can chose when you want to practice mindfulness. Sometimes in school, it can be the wrong time.
P5: Sometimes it can help with your family as well. Mindfulness can be useful. There are lots of methods that Mr. Morris teaches you. We have access to the clips at home so we can be relaxed and calm at home.
P5: The clips really help me, and other people in my family, to think more clearly. We have been practising to notice body sensations and thoughts.
P10: My Mum. I told my mum about mindfulness and she kept going on about the breathing in and breathing out. When I got really angry then she would say like…. Breath in and breath out.

Theme: Home Practice

Sub-theme: Difficulties

P3: My brother and sister find it hard to be quiet. It really distracts me. My sister sometimes came into my room and was shouting which made it hard to concentrate.
P5: Sometimes when I am practising, I keep the door open. I can hear my Mum and Dad shouting which is really loud. It makes it hard to concentrate on the mindfulness.
P4: At home, my Mum might be doing the hovering and my dad is painting. Other times, my Mum is doing Indian cooking or my Dad is drilling a hole. It was so hard to find somewhere quiet.
P6: I find it hard when I am tired or I have lots of homework. There isn't always time to practice. Also when there are other people on the laptop.
P10: It's just that… I've got loads of things to do and when we were doing it in class… I found it a bit like…. boring. I didn't really want to try it. I tried it once and it was a bit relaxing and then… yeah
P10: I think that it's harder because sometimes err…. You can learn things from it but sometimes, I find it a bit boring.
P10: Yeah I found it hard to sit and listen
P7: I think that I lost track because it was breathe in, breathe out but I closed my eyes. Instead of listening to it then I fell asleep!
P9: I just found it boring because he kept saying breathe in and breathe out, breathe in and breathe out but there was nothing going on in my mind so I didn't really see what the point was…
R: That leads me onto my next question, what made it difficult to practice at home? P13: Sister! R: Sister! That was very quick. Tell me a little bit more? P13: She is the most annoying thing in the world.
P14: My brother. He was like…. I don't like this music…. I don't want to listen to this music. I don't want to listen to this once. I don't like it. I think that's it.
P15: My brother wanted to play games on the ipad and he was snatching it away from me.
P1: My sister is always on the computer. I don't always get time to listen to the clips. It was hard to practice every single day which I know I should.
P11: We don't have a computer, we have a surface but it belongs to my sister. If she was more kind then she would have given it to me.

Theme: Home Practice
Sub-theme: Future

P5: It would be good to have a place that isn't too loud or a place that you won't be disturbed.
P4: You could have a room to yourself…. for at least 10 minutes. A quiet space where there isn't any smells of paint!
P5: They could try and organise a set time for you each day. It could be 10 or 15 minutes when everyone in the house is silent or doesn't make any noise. Well, maybe not completely silent but just a room that is quiet.
P6: My parents could not talk as loudly!
P7: Maybe it could be a little bit more silent. So then, it can help you to concentrate
P13: More time alone

P14: More time. Cos you could maybe do it after school. If you had more time than you would be more able to do it.
P12: Remind you of it… because like, your teachers are not like…. at home with you. But your parents are usually at home with you and your siblings. They could ask you…. Why don't you do that before you go and do something else because it could help you? Then you would say, "Oh yeah, Mr. Morris reminded me of that today".
P15: Maybe your teacher could set that as your challenge. You could get house points.
P1: More computer and laptops!

P. Content Analysis Coding

Question: What made it difficult to practice at home?

Access to resources e.g. computer/wifi
P1: The Wi-Fi made it difficult
P5: I found it hard to connect to the internet in my house
P23: I could not get onto the computer
P30: I had no internet connection
P33: I don't have a computer at home
P37: The internet in my house kept breaking
P38: The internet made it difficult because it would be lagging
P54: I found it hard to get some time on my apple computer
P58: My brother always uses my laptop
P64: No computer

Other commitments and interests
P6: I had too much other homework
P7: I was always busy doing other things like homework and tuition.
P10: I had other homework to do
P11: Don't really have time to play it because I had homework to do
P21: I had a lot of tuition homework so I had no time to do it
P24: I didn't have any time to do it because of football
P31: I was too busy doing my homework
P32: I had to do all my homework and my tuition homework. It would have taken a long time and I don't get that much time to do fun stuff
P45: My homework made it difficult because we have too much
P48: Other things distract me such as TV, gaming and going outside
P49: My xbox was more interesting
P51: I was too busy to listen to the clips
P57: It was a bit difficult to practice at home because it was better to listen to it before sleeping and at that time I am normally busy
P59: I was busy doing my school work
P66: The TV distracts me and it is very difficult
P71: It was difficult because I go to lots of places and like to play games and watch TV instead

Perceived lack of time
P9: I didn't have much time because I am a busy person
P19: I did not have much time to do it
P36: I couldn't find enough time
P40: I didn't have enough time to practice
P46: I didn't have any time
P60: You can't always get time to do it
P63: I would always listen to the clips too late when there wasn't enough time.
P68: No time to do it
P70: I didn't have much time to do it
P74: I don't have time to do it

Distractions from others
P4: My brother distracts me
P8: My sister bugging me
P15: People in the house annoy me
P16: The barking of my next door neighbour's dog
P17: My babysitter kept coming into the room while I was doing the meditation
P34: My brother was screaming and shouting
P39: My brothers always annoy me when I do it
P42: People kept disturbing me
P44: When my sister disturbs me
P50: My sister making too much noise
P52: My sister kept on troubling me and disturbed me lots
P55: I find it difficult to do the meditation without being disturbed
P61: My brother played on my laptop and distracts me
P56: My brother always interrupts me
P69: My brother made annoying sounds which distracts me
P67: The only thing that was difficult was sometimes my mum and dad were talking or there was a noise so I couldn't focus

No reported difficulty
P20: Nothing
P25: Nothing
P27: Nothing made it difficult to practice at home
P29: Nothing

Sleepiness
P2: I did it in the night so I started to feel sleepy
P3: It was difficult because I always get tired
P12: I started to fall asleep because it was relaxing
P13: It made me go to sleep so I didn't listen to it all
P35: It made me feel sleepy so I turned it off
P41: Sometimes I would fall asleep. I was very tired almost every single time I did it.

Boredom
P14: I get bored too easily
P18: I found it boring
P22: I wasn't really bothered to do it because it was boring
P26: It was so annoying and boring
P28: It was a waste of time and really boring
P43: I found it really boring
P47: I didn't really want to do it because it was boring
P72: I didn't want to do it because it was boring
P73: I got bored

Forgetting
P62: I forgot
P65: I forgot to do the mindfulness

P53: I just forget to do it sometimes

Question: If one thing could make home practice easier, what would it be?

Additional opportunities in school
P5: We could do it in school more
P18: Do it in school more
P26: Maybe we could listen to it at school
P37: Practice in school instead so everyone does it together
P59: Play it in school so everyone does it
P62: More time to do it in school cos it was relaxing
P63: To be able to do it in school instead
P68: Do it in school more because then everyone gets to listen
P74: Do it in school more

Clips more engaging
P13: Put on a better song so that it doesn't make you fall asleep
P20: It could be more interesting
P22: The meditations could be more fun!
P57: It would be easier if it was changed
P58: Home practice would be easier if the clips were more interesting
P72: It would be better if the clips were actually interesting

Mindfulness as homework
P6: Get it as homework from our teachers
P11: Mindfulness could be our homework
P34: We could get it as homework
P71: We could have it as homework and get house points

Improved access to resources (e.g. computer, Wi-Fi)
P1: To make it better, I would like better Wi-Fi
P10: If you could download it onto your iPod
P12: It could be more interesting and have better songs for the sounds clip
P23: If I had internet connection
P30: It would be easier if I had internet connection
P38: Better internet connection so I could actually listen on my ipad
P45: I think that the body scan could be clearer because I couldn't hear it
P51: It would be easier if I could get on the computer
P54: I think that it would be easier if the sound was clearer and the volume was louder
P64: If the school gave us the exact things we need rather than having to go and buy them

Greater parental support
P14: My parents could help me
P15: If people in the house would help me
P31: My mum could help me or practice with me
P32: If my mum could remind me to do it

P35: My parents could tell me to do it
P36: My parents could make a routine so that I definitely practised
P47: My dad could remind me to do before bed
P60: Parents could talk about it with you and give you some extra support in tough times

More perceived time
P9: To have more free time on my hands
P19: If I had more time
P21: It would be easier if I didn't have any tuition homework
P24: It would be easier if I had more time in the day
P33: If I had more time
P40: More time to do it
P46: Having time
P43: If I didn't have anything else to do like football

Quiet space
P2: There needs to be quiet in my house
P3: There would be a quiet place for me to focus
P4: My brother would be at the park so it would be quiet
P8: Somewhere quiet
P16: It would be better if it was really quiet
P29: If I had somewhere quiet to concentrate
P44: If my sisters didn't disturb me
P49: I could sit somewhere away from the noise or my mum could look after the kids whilst I listen to the clip in peace
P50: Less noise in the house
P66: To have a quiet room where it is peaceful
P67: If everything was quiet when I was practising e.g. my mum and dad don't talk and all equipment was turned off P73: Get rid of my brothers and sisters about of the room so that they don't make a noise
P55: The one thing that would make meditating easier would be not being disturbed
P56: If my brother leaves me alone and stops interrupting me
P48: Staying in a calm, peaceful area with no one to distract me
P28: It would be easier if my brother wasn't on the xbox 360 because it made it hard to concentrate
P52: I could sit alone in a room and practice

Self-discipline
P41: I could make it part of my routine each day
P42: I could set a reminder so that I do it before I went to bed
P53: I could put an alarm on for mindfulness
P65: I could make time in my evening for 5 minutes and listen to a bit
P70: Make a special time in the night for listening to the mindfulness audio clips

N/A
P7: Nothing really

P17: Nothing
P25: Nothing
P27: Nothing
P39: I think it will be
P61: I wouldn’t have left my laptop on the bed
P69: No response

Q. Proposed Abstracts

Paper 1

There is growing evidence that mindfulness-based approaches may be effective in supporting the mental health of children. This study used a mixed methods design to explore the possible benefits of the Mindful Attention Programme (MAP), which is yet to be evaluated. One hundred and forty-eight children aged 9-10 years completed measures of anxiety, negative thoughts and mindfulness before and after the programme. The intervention group also recorded the frequency of their home practice. The results showed that the MAP had a non-significant effect on anxiety ($p = 0.052$) and negative thoughts ($p = 0.055$). The MAP had a significant effect on mindfulness scores, which increased over time ($p = 0.02$). There was no relationship between home practice (i.e. reported completion of meditations at home) and outcomes which contradicts previous findings. Findings from a content analysis suggested that there were a number of barriers to practising at home (e.g. distractions from others, other commitments and interests, access to resources and perceived lack of time). It is hypothesised that the benefits of home practice may be different for developmentally younger children. Two recommendations are made from this research. Firstly, further research into the benefits of the MAP is required. Secondly, researchers need to find ways to maximise parental participation in mindfulness programmes when working with younger children.

Paper 2

There is growing evidence that mindfulness-based approaches may be effective in supporting the mental health of children and young people. After completion of the Mindful Attention Programme (MAP), three focus groups were conducted with children aged 9-10 years. Thematic analysis was used to analyse and identify key patterns in the data. Three main themes were identified (reported change, mechanisms of change and home practice). In the first theme, children reported a reduction in worry, reduction in anger and reduction in physical tension. In the second theme, mechanisms of change were explored. It was found that the mechanisms of change differ for children and adults, suggesting that developmental level has an impact on how mindfulness is understood and applied. In the final theme, consideration of the benefits, difficulties and future of home practice are considered. The implications for the knowledge base, practice and future research are discussed.

Paper 3

This paper aims to provide a systematic literature review of universal cognitive-behavioural programmes and specifically, their effectiveness in reducing anxiety in children and adolescents. Fifteen studies were identified and evaluated using the weight of evidence framework (Gough, 2007). Overall, the results were promising with effect sizes ranging from small-medium. Several studies also included follow-up data, with encouraging results. This suggests that some universal cognitive-behavioural programmes are effective in reducing anxiety among children and adolescents. The results of this review also showed that for "high risk" children (i.e. those with clinical levels of anxiety at pre-test); universal programmes can be comparable in effectiveness to targeted approaches. However, future research with sufficient sample sizes, recorded implementation fidelity and triangulated data must be conducted before cognitive-behavioural programmes become widely disseminated into classrooms.

R. Journal Articles Identified for Publication

Paper 1

Identified Journal	Journal Characteristics		
	Impact Factor	Peer Review (Yes/No)	Relevant Information
School Mental Health	1.098	Yes	The journal publishes "empirical studies, theoretical papers, and review articles from authors"
Child and Adolescent Mental Health	1.441	Yes	The journal states that papers need to clearly draw out the clinical implications for mental health practitioners
Mindfulness	3.692	Yes	*The journal* encourages research submissions on "….clinical uses of mindfulness in psychological distress….mechanisms of action…."
School Psychology International	1.447	Yes	The journal encourages a range of methodologies "including quantitative and qualitative research, single-subject designs, and longitudinal studies"
British Journal of Educational Psychology	2.00	Yes	The journal recognise that they publish more quantitative than qualitative studies
Journal of Mixed Methods	2.186	Yes	The journal expects a mixed methods design which helps to determine "the logistics of conducting mixed methods research"
Psychology in the Schools	0.761	Yes	The journal states that they give preference to "manuscripts that clearly describe implications for the practitioner in the schools"
Journal of School Psychology	2.262	Yes	The journal presents "research on intervention mechanisms and approaches….effects on the development of social, cognitive and mental-health outcomes"
British Educational Research Journal	0.648	Yes	The journal reports on research such as "curriculum, inclusive and special education, educational psychology, policy…."
The Journal of Educational Research	1.307	Yes	The journal reports on research that has "direct relevance to educational practice in elementary and secondary schools"
Journal of Child and Family Studies	1.161	Yes	The journal aims to publish "topical issues pertaining to the mental well-being of children, adolescents, and their families"

Paper 2

Identified Journal	**Journal Characteristics**		
	Impact Factor	Peer Review (Yes/No)	Relevant Information
International Journal of Qualitative Studies in Education	0.533	Yes	The journal publishes research that employs a "variety of qualitative methods and approaches"
Qualitative Psychology	n/a	Yes	The journal will include papers that demonstrate the "distinctive contributions that qualitative research can make to the advancement of psychological knowledge"
Qualitative Research in Psychology	0.00	Yes	The journal presents "the full range of qualitative approaches to psychological research"
Qualitative Inquiry	1.674	Yes	The journal is an "interdisciplinary forum for qualitative methodology and related issues in the human sciences"
Qualitative Research	1.909	Yes	This journal publishes research showing "the methodological diversity and multi-disciplinary focus of qualitative research"
Qualitative Research in Education	0.517	Yes	The journal is interested in qualitative research that promotes an "understanding and improvement of educational processes"
Mindfulness	3.692	Yes	*The journal* encourages research submissions on "….clinical uses of mindfulness in psychological distress….mechanisms of action…."
School Psychology International	1.447	Yes	The journal encourages a range of methodologies "including quantitative and qualitative research, single-subject designs, and longitudinal studies"
Educational and Child Psychology	0.00	Yes	The journal "consists of papers devoted to a theme of relevance for educational psychologists. The themes are announced in advance"
Psychology in the Schools	0.761	Yes	The journal states that they give preference to "manuscripts that clearly describe implications for the practitioner in the schools"
Journal of Child and Family Studies	1.161	Yes	The journal aims to publish "topical issues pertaining to the mental well-being of children, adolescents, and their families"

Paper 3

Identified Journal	Journal Characteristics		
	Impact Factor	Peer Review (Yes/No)	Relevant Information
School Mental Health	1.098	Yes	The journal publishes "empirical studies, theoretical papers, and **review articles** from authors"
Child and Adolescent Mental Health	1.441	Yes	The journal states that papers need to clearly draw out the clinical implications for mental health practitioners
School Psychology International	1.447	Yes	This journal accepts review papers and "particularly encourages those that use a systematic and rigorous process for identifying, synthesizing, and reporting the extant research on the topic"
Educational Research Review	2.452	Yes	The journal will accept "meta-analytic reviews, narrative reviews and best-evidence syntheses"
Journal of Child and Family Studies	1.161	Yes	The journal aims to publish "topical issues pertaining to the mental well-being of children, adolescents, and their families"
Psychology in the Schools	0.761	Yes	The journal states that they give preference to "manuscripts that clearly describe implications for the practitioner in the schools"
Journal of Child and Adolescent Mental Health	0.00	Yes	The journal publishes **review articles**, original research, clinical papers, letters to the editor, and book reviews.
Journal of Anxiety Disorders	2.594	Yes	Theoretical and review articles that contribute substantially to current knowledge in the field are appropriate for submission.
Anxiety, Stress and Coping	1.779	Yes	This journal accepts "well-designed, methodologically sound research reports, theoretical papers, and interpretative literature reviews or meta-analyses"
Journal of Educational Psychology	3.518	Yes	This purpose of this journal is to publish "original, primary psychological research" although it will occasionally publish "important theoretical and review articles"
Educational Psychology Review	2.565	Yes	This journal is primarily interested in "review articles, special thematic issues, reflections or comments on previous research or new research directions…."
The Journal of Educational Research	1.307	Yes	The journal reports on research that has "direct relevance to educational practice in elementary and secondary schools"

S. Draft Proposal for Poster Presentation

Introduction

- Anxiety disorders are among the common psychiatric disorders in school-aged children and adolescents (Neil & Christensen, 2009
- There is some evidence that mindfulness-based programmes are effective in reducing anxiety (Sibinga et al. 2013; Van de Weijer-Bergsma Langenberg et al. 2012)
- This research evaluated whether the MAP was an effective intervention for reducing anxiety. It also attempted to fill three gaps: (a) the impact of mindfulness on negative automatic thoughts, (b) the relationship between home practice and outcome and (c) the mechanisms of change i.e. how does mindfulness work?

Method

Design: This research used an explanatory sequential mixed-methods design. In the first phase of the research, three measures were administered pre and post intervention. In the second phase, a follow-up questionnaire was administered (analysed by content analysis) and three focus groups were conducted (analysed by thematic analysis).

Participants: There were 82 children in the experimental group and 80 children in the comparison group. Across the three focus groups, there were four, five and six children, respectively.

Measures:

- Spence Children's Anxiety Scale (SCAS; Spence, 1998)
- The Children's Automatic Thoughts Questionnaire (CATS; Schniering & Rapee, 2002)
- Mindfulness Awareness and Attention Scale for Children (MAAS-C, Lawlor 2012)
- The children were also asked to report the frequency of their home practice.

Results

- The results showed that the MAP had a non-significant effect on anxiety (p = 0.052) and negative thoughts (p = 0.055).
- The MAP had a significant effect on mindfulness scores, which increased over time (p = 0.02).
- There was no relationship between home practice (i.e. reported completion of meditations at home) and outcomes which contradicts previous findings (Huppert & Johnson, 2010).

Content Analysis

1. What makes it difficult to practice at home?

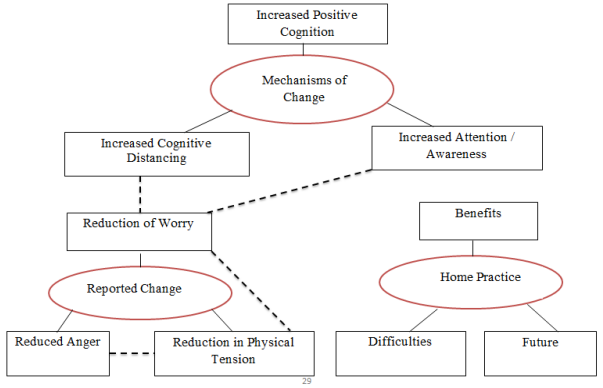
Category	***%***
Access to resources	13.5
Boredom	12.2
Distractions from others	21.6
Sleepiness	8.1
Forgetting	4.1
Perceived lack of time	13.5
Other commitments and interests	21.6
No reported difficulty	5.4

2. What would make home practice easier?

Category	***%***
Additional opportunities in school	12.2
Clips more engaging	8.1
Mindfulness as homework	5.4
Improved access to resources	13.5
Greater parental support	10.8
More perceived time	10.8
Access to a quiet space	23
Self-discipline	6.7
N/A	9.5

Thematic Analysis

Thematic analysis was used to identify themes (Braun & Clarke, 2006). Three main themes were identified: *reported change*, *mechanisms of change* and *home practice*.



Implications

- Replication of the MAP is required. When replicating, researchers should use a wider battery of questionnaires to capture possible change (e.g. SDQ; Goodman, 1997).
- Finding ways to involve parents in mindfulness programmes is essential. In the context of mental health difficulties, this is particularly important given that family factors (e.g. parent psychopathology, family discord) are implicated as risk factors.
- Future mindfulness programmes need to measure whether home practice has an enhancing effect on outcomes.